

A strategy for engaged learning in an MBA programme

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PREFACE (TOC_HEADING)

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I usually hate this section, because it is so often filled with clichés. If my sincere acknowledgements are regarded as clichés, please forgive me, but the following words of thanks come from my heart.

It is funny how innovation works. Ideas shared are ideas growing. Many of the innovations described in this study came from students, were critiqued by other students and refined by colleagues. I just had the guts (or foolhardiness) to introduce, formalise and test them. My greatest thanks go to all these cohorts of students, without whom the strategy for engaged learning would never have become a reality.

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My parents-in-law, David and Juliana Maartens, have taught me that you can do anything if you can read, to emulate the best by “stealing with your eyes”, to be the best that you can at all times. Thank you for your continued support and unconditional love. I love you as much as I love my own parents.

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ABSTRACT

Engaged learning is a novel combination of known methods, all related to student engagement and aimed at improved learning of subject content and development of generic skills. This study describes the formulation, implementation and evaluation of a strategy for engaged learning in an MBA programme, where the engaged learning strategy was developed from first principles, implemented during a six-month intervention in an MBA Operations Management course, and evaluated through a mixed method study.

The study starts with an analysis of a number of the most prominent epistemologies and learning theories and philosophies, from ancient times to the present. Elements that could be used in an engaged learning strategy are extracted from each of them. The most prominent epistemologies contributing to engaged learning are constructivist, cognitivist, connectivist and, to a lesser extent, behaviourist. Principles of andragogy are also applicable.

Various learning methodologies that have been developed in the 20th and 21st century are then described and analysed for applicability in an engaged learning strategy. The use of the correct technological tools and assessment strategies to enhance engaged learning are also investigated. The elements of these methodologies, tools and assessment methods that would enable real learning and that would constitute real engagement are highlighted, and a selection is made of methods to include in an engaged learning strategy.

Since learning has evolved from mere acquisition of knowledge to the development of a generic skill set that is required by employers, the skills required of MBA students are investigated, and the most required generic skills were chosen to be included in the study. A distinction is made between the often interchanged definitions of generic skills, employability skills and pervasive, soft or generic skills, the latter being chosen for use in this research. Recent research on the relative importance of generic skills for MBA students is described, and a selection of eight generic skills deemed the most important skills that a strategy for engaged learning could develop, is made. These eight skills are discussed, including the importance of each for MBA graduates, ways of developing each skill and instruments to measure the level exhibited of the skill. Evidence of the development of all eight these skills through 21st-century learning methodologies is summarised, and possible causal relationships between these skills are identified.

From the principles of learning, as proposed in an array of 21st-century learning methodologies, a practical strategy for engaged learning is proposed, and an implementation plan compiled. This strategy was implemented during the intervention.

To evaluate the success of the strategy for engaged learning, a QUANT/qual mixed method approach was used, and the instruments that were used for data collection was validated. Both the quantitative and qualitative methods are described in detail. The strategy for engaged learning was tested quantitatively through a questionnaire that was found to be valid and reliable. Through repeated sample ANOVAs and t-tests, it was found that not only did learning of subject material ensue, but that all the generic skills included in the questionnaire did develop. In all cases, the results are both statistically and practically significant. Following this, the results were triangulated through content analysis of reflection reports and from this analysis, mechanisms for the learning and developing of generic skills are proposed, as well as mechanisms through which the different elements of the engaged learning strategy add value, are proposed. The qualitative analysis not only confirms the quantitative results, but also provides a deeper insight into the mechanisms involved when the strategy for engaged learning is employed.

The study concludes with a comparison of the research objectives and the findings, where it is found that all the objectives have been met. Conclusions are drawn, the most important one being that the strategy for engaged learning does result in learning. Some methodological conclusions are also reached. From these conclusions, some recommendations are proposed and the theoretical and practical contribution of the study as confirmed.

KEY TERMS

Andragogy, classroom engagement, communication skills, community engagement, critical thinking skills, cultural awareness skills, engaged learning, epistemologies, flipped classroom, generic skills, graduate attributes, learning, learning theories, MBA, pervasive skills, problem-solving skills, self-management skills, service-learning, teamwork skills, work-integrated learning, workplace engagement

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CHAPTER 1: NATURE AND SCOPE OF THE STUDY

“People never learn anything by being told; they have to find out for themselves.”

— Paulo Coelho,

“Nothing ever becomes real 'til it is experienced.”

— John Keats

1.1 Introduction

Higher education is experiencing a fundamental shift in learning and teaching paradigms. The abundance of knowledge available on the Internet, with its associated exponential technological developments in the 21st century, is enabling new methods of teaching that were not possible in the 20th century (Goldie, 2016:1068). Although the 20th century has seen various learning theories postulated and proven (Bates, 2015:77) and a multitude of novel teaching methods introduced, using terms like “blended learning”, “experiential learning”, “action learning”, “service-learning” and “deep learning”, these terms have only become common phrases in tertiary education at the turn of the 21st century (Deschacht & Goeman, 2015:88; Hesselbarth *et al.*, 2015:47; Rienties & Toetenel, 2016:340; Ruhi, 2016:209).

Accompanying this shift in teaching methods, the demand from employers has also shifted from a demand for graduates with particular academic knowledge, towards a demand for graduates exhibiting specific skills and attributes that transcend subject-related knowledge and skills. This has given rise to the study field of “graduate attributes”, “generic skills”, “pervasive skills”, or “employability skills”, terms that are often used interchangeably (Cairns & Malloch, 2017:121; Kember *et al.*, 2016:15; Shuttleworth & Reyneke, 2017:203). The demand for employees with generic skills, combined with novel teaching methods, have changed the notion of learning in higher education towards a combination of the attainment of subject-related knowledge and the acquisition of generic skills.

For students graduating from MBA programmes, the development and mastering of generic skills, such as problem-solving, communication and teamwork skills, is a necessity, since these skills form an essential part of their daily jobs. The need for generic skills poses a question: Is there a teaching strategy, suitable for MBA learning, that enables students to engage with and master subject-related knowledge while developing the generic skills that the market expects of MBA graduates? To answer this question, this study proposes a teaching strategy for engaged learning in an MBA programme.

The strategy for engaged learning, as described in this study, has been developed and informally tested over eight years through a series of well-researched innovations. This study aims to describe these innovations, to formalise them into a single strategy and to scientifically validate this strategy.

1.2 Problem statement

Over the last decade, due to a global increase in online delivery of the MBA qualification, the number of institutions offering online MBAs has overtaken the number of business schools providing face-to-face tuition (Arbaugh & Hwang, 2015:172). To stay competitive, business schools with face-to-face modes of delivery need to create a competitive advantage by focusing on their critical success factors, which could include anything from their curriculum to their teaching and learning environment. Unfortunately, many MBA programmes have become less competitive due to their persistent focus on knowledge (Bachrach *et al.*, 2017:582), which Mintzberg (2004:18) already realised at the turn of the century by proposing a teaching approach where managers engagingly collaborate on current business-related issues. Although this approach can contribute to increased learning and development of generic skills (Dyllick, 2015:31), many lecturers are not necessarily ready to adopt this new manner of teaching (Faridi *et al.*, 2017:263).

Business schools, therefore, need to adapt on (at least) two fronts to stay relevant. They need to ensure that their offering ensures real learning among students, and they need to deliver MBA graduates with a disposition that extends beyond subject knowledge by also exhibiting the generic skills that the market needs (Kalfa & Taksa, 2015:594; Mihail & Kloutsiniotis, 2014:221; Natarajan & Kumar, 2014:6; Oliver, 2013:462). Engaged learning in a classroom environment seems to be one such vehicle that could become a potential source of competitive advantage for business schools, but for this to happen, engaged learning needs to be described, understood, implemented and tested.

Therefore, the purpose of the study is to design, document and test a strategy for engaged learning in an MBA programme.

1.3 Literature overview to verify the relevance of the topic

The study was carried out in an MBA programme. An MBA (Master in Business Administration) is a master's degree that exposes post-graduate students to general management knowledge

and skills over a period ranging from one year (full-time) to three years (part-time). In most MBA programmes different subjects are taught that range from the functional level (such as financial, marketing and operations management) to the strategic level, often accompanied by a mini-dissertation (Wieser, 2016:118). Increasingly MBA degrees are pursued to advance students' careers, and hence, employability has become an essential deliverable in MBA programmes (Ruth, 2017).

Since the time of Socrates (470 to 399 BC) and Confucius (551 to 479 BC), the understanding of learning has developed enormously (Harasim, 2017:28). The original concept of learning followed a strictly instructivist philosophy, with the “master” conveying knowledge to his pupils. Since then, learning philosophy has developed through many epistemological paradigms (Ertmer & Newby, 1993:69), each of them consisting of some learning theories that all try to explain how learning takes place. The most prominent of these theories are explained in more detail in chapter 2. The most noticeable epistemological schools are the objectivists, proposing learning theories where knowledge is passed from teacher to student (Garvey, 1994:23), behaviourists, who view learning in terms of how it elicits different kinds of behaviour (Murtonen *et al.*, 2017:126), cognitivists, who focus on the cognitive processes taking place in the mind while learning takes place (Ertmer & Newby, 1993:70), constructivists, who believe that knowledge is constructed as the student interact with the learning material and practice (Yoders, 2014:19), and connectivists, who see learning as the process of linking different facts and pieces of knowledge (Kropf, 2013:23). Different scholars, mainly philosophers and psychologists, tried to explain how learning takes place from their respective viewpoints, but collectively, they all contributed to the current understanding of how learning takes place. The discussion in chapter 2 elucidates their views (Agarkar & Brock, 2017:102; Christie *et al.*, 2015:21; Clarà & Barberà, 2014:204; George, 2015:3973; Gupta & Chintalapati, 2017:47; Kumar & Nazneen, 2016:234; Lourenço, 2016:135; Schunk, 2012:6; Thompson, 2016:627; Upham *et al.*, 2014:141).

In 1973 Malcolm Knowles postulated some assumptions on the difference between how children learn and how adults learn. He used the term “andragogy” to describe adult learning, as an alternative to the term “pedagogy”, describing the learning of children (Knowles *et al.*, 1973:14). An understanding of how adults learn could hold the key to a strategy that improves learning effectiveness while simultaneously developing specific generic skills for MBA students. Knowles' assumptions are that adults (i) are self-directed, (ii) learn through their wealth of experience, (iii) learn based on their level of readiness, which is closely related to their tasks or roles, (iv) apply immediately (in contrast with children, who might need the information someday in future), (v) are intrinsically motivated to learn and (vi) need to know why they are learning something (Merriam, 2010:13). Although these assumptions have been criticised as not worthy of being regarded as a

learning theory, they have been validated and have never been disproven (Cochran & Brown, 2016:81; Noor *et al.*, 2012:576; Tainsh, 2016:6; Todd *et al.*, 2017:14).

Noor *et al.* (2012:577) proposed that andragogic principles lead to self-directed learning as a viable learning methodology for adults. Although not limited to adults, learning tasks for adults should especially be practical, relevant and meaningful and should, if possible, be immediately applied (Cozma, 2015:1212). Although a myriad of teaching methods are proposed to enhance adult learning, project-based learning is the one method that exhibits most advantages towards the development of generic skills in MBA students (Efstratia, 2014:1260). Again, the need for practical application seems to run like a golden thread through different learning methodologies focusing on MBA students as adult learners (Cozma, 2015:1212). In Chapter 3, these methods are examined in more detail.

As the understanding of learning grew, various teaching and learning methodologies and methods have been developed. Some modern teaching methods have been proven to have an impact on the personal development of students over and beyond the mere transfer of knowledge (Abrami *et al.*, 2015:312). A number of these, as described in scholarly studies, are:

- work-integrated learning (Leong & Kavanagh, 2013:13);
- service-learning (Richard *et al.*, 2017:72);
- gamification (Hanus & Cruz, 2016:222);
- classroom engagement activities (Bass & Pleggenkuhle-Miles, 2016:346; Green & Williams, 2016:42);
- focus on action (Gupta & Chintalapati, 2017:55); and
- internships (Kemp *et al.*, 2017:247).

Some of these have demonstrated proven additional benefits for MBA graduates. Amongst these benefits are improved

- job opportunities (Beck & French, 2016:48);
- a sense of civic responsibility (Figueiró *et al.*, 2016:25; Rutti *et al.*, 2016:436); and
- problem-solving skills (Bright *et al.*, 2016:97).

The last two benefits mentioned above point to the development of a broader generic skill set. Apart from problem-solving skills, researchers also list some other skills that employers require of MBA graduates. Andrews (2015) has compiled a summarised list of generic skills that employers want most from MBAs, by combining research results by Bloomberg Research (Bloomberg, 2015), GMAC Research (GMAC, 2015), AMBA's Employer's Forum (AMBA, 2014)

and the NACE - National Association of Colleges and Employers (Gray & Koncz, 2015). There is a significant overlap between the results of these different research reports. The most comprehensive of these lists, Bloomberg's list of generic skills, includes (in alphabetical order): ability to work collaboratively, adaptability, analytic thinking, communication skills, creative problem-solving, decision-making, entrepreneurship, global mindset, industry-related work experience, initiative/risk-taking, leadership skills, motivation/drive, quantitative skills and strategic thinking. Summarised in

Table 1-1 below, a ranked list of generic skills shows the frequency of the mentioning of these by ten of the most notable research reports that focus on MBA generic skills development since 2014. These studies highlight the extent to which researchers deem generic skills as essential attributes in MBA programmes.

Table 1-1 Ranked list of generic skills required of MBA students

		Total ranking scores	Andrews (2015)	Estrada-Worthington (2015:18)	AMBA (2014)	Gray and Koncz (2015)	Adhikari and Agrawal (2016:290)	Chakraborty et al. (2017:101)	Saxena and Bendale (2014:652)	Osmani et al. (2015:477)	Mihail and Kloutiniotis (2014:220)	Coetzee (2014b:888)
	Generic skill		Rankings									
1	Communication	68	1	1	1	3	1			1		1
2	Teamwork	51	5	2		1	4	5		2	7	
3	Leadership	39	2	4		2	2			7	10	
4	Problem-solving	37	3			4	6			3		2
5	Decision-making	33					3		1		5	2
6	Work ethic/self-management	21				5				8	3	7
7	Technical	19		3		7				4		
8	Analytic	17	7			6	5					8
8	Presentation	17			2						8	5
10	Strategic thinking	16	4						2			
11	Adaptability	14	6		3					9		
11	Initiative	14				9		1			9	
11	Interpersonal	14								6	2	
14	Self-motivation	13						3				6
15	Negotiating	12			4						6	
16	Critical thinking	9						2				
17	Systems	8							3			
18	Risk-taking	7						4				
19	Creativity	6								5		
19	Managerial	6		5								

Source: Compiled from different sources mentioned in the table.

In table 1.1, the ranking scores are allocated by assigning values from 10 (highest-ranking skill) to 1 (lowest-ranking skill) and adding the totals. The ranking scores are based on the ranking that each of the skills received in the various research reports. For example, communication has been mentioned and ranked as the most important by six of the international studies (Adhikari &

Agrawal, 2016:291; AMBA, 2014; Andrews, 2015:18; Estrada-Worthington, 2015; Osmani *et al.*, 2015:477), as well as in a study in South Africa by Coetzee (2014b:888), therefore a value of 10 was assigned to each of these rankings, totalling sixty. In the report by Gray and Koncz (2015), teamwork ranked first and communication third, and therefore, communication was allocated a value of eight. The value of 68 for communication was therefore calculated by 6×10 (six times highest ranking) + 8 (once third highest ranking). If a study only listed five attributes, its rankings were scored from 10 to 6.)

However, the absence of a focus on the development of generic skills in regular MBA curricula is widely stated and critiqued (Caza & Brower, 2015:108; Desai *et al.*, 2016:29; Hühn, 2014:538). Hill *et al.* (2016:162) propose that the challenge of how to develop specific generic skills needs to be addressed at a policy level and that development of generic skills should be linked to programme outcomes and programme objectives. Australian universities are the world leaders in focusing on generic skills in their academic programmes, and many have in their formal strategy a “statement of graduate attributes” (Hill *et al.*, 2016:160). In practice, whether institutionally enforced or not, generic skills are developed when individual academics pursue learning objectives that are balancing the development of generic skills with the learning of subject content (Kember *et al.*, 2016:15; Leung & Kember, 2013:238).

The body of knowledge about ways to enhance and assess generic skills among MBA students is growing, but it is still limited (Aithal & Suresh Kumar, 2015:129; Southam *et al.*, 2016:24). Various practical suggestions have been proposed to develop generic skills, most of them implying increased interaction with industry. One such example (David *et al.*, 2011:61; Mourshed *et al.*, 2012:6) is to ensure that the curriculum links closely to the reality of business, by getting employers involved in the curriculum or the execution of the curriculum. A common theme in research on developing generic skills is that the inclusion of practical content, such as internships (Caballero *et al.*, 2015:409; David *et al.*, 2011:61), fieldwork (Daniels & Brooker, 2014:75; Haigh & Clifford, 2011:583; Su, 2014:1219), or general work-integrated learning (WIL) programmes (Sangwan & Garg, 2017:113) indeed develops generic skills, especially at post-graduate level (Berg *et al.*, 2015:3).

Although the development of generic skills has been researched increasingly over the last decade, limited research focuses on the assessment of attributes. However, some instruments have been developed over the years to assess the attainment of generic skills, or graduate attributes, by students. Amongst them are the Student Course Experience Questionnaire (SECQ), a Likert scale instrument developed at the University of Sydney, which also contains open-ended questions. In Europe, the Graz Instrument for the Evaluation of Competencies (GEKo), the Evaluation in Higher Education: Self-Assessed Competencies (HEsaCom) and the Berlin

Evaluation Instrument for Self-Reported Student Competencies (BEvaKomp) were developed. All of these break down specific attributes into individual items and then score them on ordinal scales (Ipperciel & ElAtia, 2014:29). An instrument that was developed and used in South Africa is the Graduate Skills and Attribute Scale (GSAS) (Coetzee, 2014b:901; Coetzee *et al.*, 2015:8; Potgieter & Coetzee, 2013:9). This instrument measures specific attributes, such as problem-solving and decision-making, analytical thinking, and “enterprising skills”, and has been validated and successfully used on MBA students (Potgieter & Coetzee, 2013:8). A more comprehensive analysis of generic skills follows in chapter 4.

1.4 Research objectives

1.4.1 Primary objective

The primary objective of this study is to formulate, implement and evaluate a strategy for engaged learning in an MBA programme.

1.4.2 Secondary objectives

- To examine and identify the relevant learning theories that could contribute to a strategy for engaged learning in an MBA programme.
- To examine and identify relevant learning methodologies that could become part of an engaged learning strategy.
- To identify those generic skills required of MBA graduates that could be developed through an engaged learning strategy.
- To propose an engaged learning strategy and draft an implementation plan for the engaged learning strategy.
- To evaluate the proposed engaged learning strategy.

1.5 Research methodology

The strategy for engaged learning is described in chapter 5, along with an implementation plan. This strategy was compiled from the information found in the literature, described in chapters 2, 3 and 4. The empirical research follows a post-positivist approach (Prashar, 2015:132) by

focusing on the testing of the success of the strategy to develop MBA students' generic skills. A mixed method approach (QUANT/qual) was used to gather quantitative and qualitative data over a six-month intervention. Since the primary objective of the study is to establish whether the strategy leads to learning, the primary method was a quantitative pre/post-test, gauging the subject learning and development of generic skills that took place during the intervention. The pre-test was complemented by a retrospective pre-test to correct for any over-estimation of generic skills that could be present in the pre-test (Ebrahimi & Azmi, 2015:851; Fernandez *et al.*, 2015:351). This data was analysed using IBM SPSS 25.

Having established that learning did ensue during the intervention, a qualitative study was undertaken to explain the mechanisms through which the engaged learning strategy contributed to the learning. This triangulation was especially necessary since the study population consisted of the small number of only 141 participants that were enrolled for the MBA programme in 2018 at the reputable Business School in South Africa where the study was carried out. Qualitative data entailed content analysis of reflective logs completed by participants about their experience of the elements and value of the engaged learning strategy. Summative reflection reports that the participants completed at the end of the intervention were used in conjunction with template-driven reflection reports, where participants reflected on the value of different methods employed during the implementation of the engaged learning strategy. This data was analysed using Atlas.TI 8.3.17 software.

The research methods employed, validity and reliability of the instruments used and the findings of the study are described in detail in chapters 6 and 7.

1.6 Ethical considerations

The study is essentially the evaluation of the benefits of the use of engaged learning techniques on a group of MBA students. The research was submitted to the EduREC Research Ethics Committee of the North-West University and has received ethical clearance (Ethics approval number NWU-00657-18-A2). All qualitative responses from participants were anonymous and, to enable in-group qualitative comparisons between a respondents' different responses, each participant's contributions were linked by introducing a unique six-letter code the participants compiled themselves. The same unique code was also used by the respondents to link their quantitative responses to their qualitative reflection reports. Ethics issues relating to the research are described in detail in chapter 6.

1.7 The proposed contribution of the study

Since lecturers in many MBA programmes focus more on knowledge transfer than skills development (Caza & Brower, 2015:108; Desai *et al.*, 2016:73; Hühn, 2014:538), MBA graduates are not holistically prepared to handle all the challenges they face in the working environment (Northall *et al.*, 2016:30). The proposed strategy for engaged learning encompasses the definition of learning as both acquisition and application of subject knowledge and the development of generic skills and is, therefore, a tool that MBA lecturers can use to ensure sustainable learning of subject content, as well as to develop their students' generic skills. Provision of such a tool would make a valuable academic and practical difference to the body of knowledge and to the employability of MBA students. Therefore, the contribution can be described in terms of the following:

- Engaged learning, as defined in this study, is a novel combination of known andragogic concepts in an MBA context.
- Learning on an MBA level is a relatively under-researched field, especially in developing countries such as South Africa, where this study was carried out. Any research that could improve learning would make a valuable theoretical and practical contribution to the body of knowledge.
- One of the elements of engaged learning is community engagement, embodied in service-learning, which, on an MBA level, is an under-utilised and under-researched practice. The increasing need for community engagement, especially in developing countries, underlines the need for a well-documented practice that benefits students and the broader community.
- The possibility to later expand the application of the engaged learning methodology to other disciplines and undergraduate students further adds to the contribution of the study and is addressed in the final chapter.
- On the institutional level, the most significant contribution concerns the relevance of face-to-face contact mode of delivery (i.e. blended learning) at business schools in the Internet age. Should universities, utilising blended learning in their offering, not provide more value than online content, those universities will lose students (Burga *et al.*, 2017:316). If business schools offering face-to-face modes of delivery want to stay relevant, they should rethink their value proposition and the accompanying teaching methods, since students might no longer tolerate outdated lecturing styles (Örtenblad *et al.*, 2013:91).
- Engaged workers are better performers (Reijseger *et al.*, 2017:129). The effect of engaged learning could hold substantial benefits to students' place of work, should their engaged behaviour manage to transfer to the workplace.

- The body of scientific knowledge about ways of enhancing and assessing generic skills among MBA students is limited (Andrews, 2015). More specifically, there is scant evidence of the effect of community projects on the development of students in the business and management discipline, especially on MBA level (Bennett *et al.*, 2016:161). The other main contribution of this study is to assist in filling this void.

1.8 Delimitation of the study

The research setting is an Operations Management course at a South African business school where an MBA is taught on a two-year part-time basis. The main empirical study took place over a six-month period, where the proposed strategy was employed.

1.9 Chapter division

This report starts with the framing of the study (chapter 1) and then follows the three strategic stages of strategy formulation (chapters 2-5), implementation (chapter 5) and evaluation (chapters 6-7), with the final chapter summarising and tying the study together.

- Chapter 1: Nature and scope of the study. In this chapter, the background to the study is explored, the problem is stated, and research objectives are set. A methodology is proposed for the remainder of the study.
- Chapter 2: Foundations of learning, where the philosophical and psychological basis of learning theories underpinning engaged learning are analysed, and some elements that could form part of an engaged learning strategy were extracted from these theories.
- Chapter 3: 21st-century learning methodologies. This chapter describes different methodologies that are widely employed to improve learning in the 21st century. The list of methodologies is not exhaustive but includes those that focus on deep learning and student engagement and could therefore possibly contribute to the strategy for engaged learning.
- Chapter 4: The broader objective of learning: generic skills required for and developed in MBA students. This chapter explores the generic skills base that employers need. The deliverable for this chapter is a ranked list of attributes and skills that form the basis of the empirical study.
- Chapter 5: The proposed engaged learning strategy. The main focus of this chapter would be to describe the strategy in detail and set out an implementation plan.

- Chapter 6: A detailed description of the research method employed for evaluating the strategy for engaged learning. This chapter starts with a brief discussion of the philosophical basis of the research, followed by a detailed discussion of data collection methods, interview protocols, questionnaires, and qualitative and quantitative analysis methods.
- Chapter 7: Qualitative and quantitative findings. The analysis of the data collected during the intervention is provided and discussed.
- Chapter 8: Achievement of the research objectives: The final chapter contains conclusions drawn from the study, as well as recommendations. Recommendations include managerial and teaching implications, recommendations for further research and recommendations on the roll-out of the study, if the model is to be employed on a bigger scale. The main theoretical and practical contributions of the study are also presented.

1.10 Chapter summary

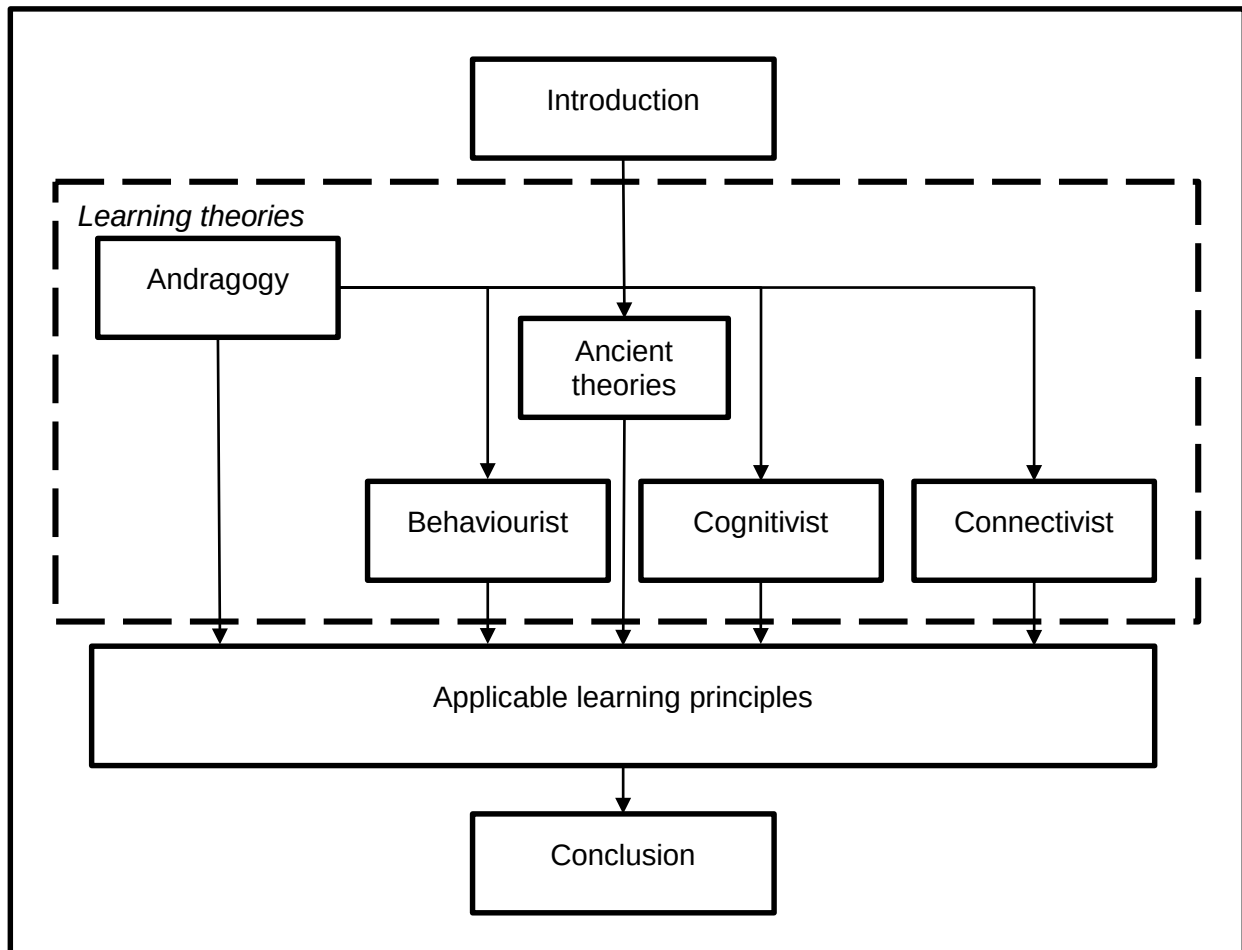
In this chapter, the study was introduced, the problem was stated and, following a brief introductory literature study, objectives were set for the study. The research method followed was described, and the delimitations of the study were shown. The chapter concluded with a brief description of the structure of the remainder of the study.

Since the study revolves around engaged learning, chapter 2 firstly focuses on the concept of learning, with an analysis of the different learning theories to identify elements that could be included in a strategy for engaged learning.

CHAPTER 2: THE FOUNDATIONS OF LEARNING

2.1 Introduction

Figure 2-1: Structure of chapter 2



The previous chapter gave an outline of the study, the problem statement, research objectives and the method to be used in this research. Chapter 2 describes the different epistemologies and a few of the most prominent learning theories in each epistemology that form the basis of engaged learning. *Epistemology* refers to the philosophy of knowledge, more specifically, the logic to accept or reject propositions about social reality (Coady & Fricker, 2017:155; Figueroa, 2016:3). Therefore the chapter starts in paragraph 2.2 with a summary of the philosophical bases of the epistemologies that follow. Since most learning theories are rooted in psychology (Thomas *et al.*, 2014:54), the psychological premise of those theories is included in the discussion.

In paragraph 2.3 the principles of andragogy (the study of adult learning) are explained, after which the focus moves to the classical learning theories, initially following a basic timeline structure, ending with Rene Descartes' and John Locke's contributions towards learning theory. From there onwards, the argument is organised according to the different dominant

epistemologies. The behaviourist theories are first discussed, followed by the cognitivist theories, constructivist theories and a brief discussion of connectivism. As the discussion of learning theories progresses from the understanding of learning in ancient times to the modern period, it gets more detailed. The chapter is concluded with a listing of the learning principles extracted from the theories discussed, to be included in an engaged learning strategy.

It is evident that the different learning theories are attempts by different scholars, organised in certain schools of thought, to explain what happens with the human during learning. As such, they are not mutually exclusive (Bates, 2015:17), and some elements from all these theories are still applicable in the 21st century. The objective of the discussion is to use different learning theories to identify learning principles related to engaged learning. Therefore, and since all these theories are attempting to explain the same phenomenon (learning) from its unique angle, those principles of learning that are still applicable in the current teaching and learning environment are summarised after each sub-section, and again unpacked, described, and compared in the final paragraph.

As the study is specifically focusing on a strategy for engaged learning *in an MBA* programme, adult learning is relevant, and that is why the chapter starts with the assumptions of andragogy (the study of adult learning). During the discussion of the different theories, references are continuously made to engaged learning and adult learning.

2.2 Criteria for learning theories to be included in this study

Since most learning theories are shaped by contemporary knowledge, they are essentially time-bound, although some of the principles identified in the specific theory could be timeless. To be regarded as a learning theory, a few conditions need to hold, and the theories discussed in this study have the following characteristics in common (Harasim, 2017:28):

- they have a philosophical grounding (Eysenck, 2013:360);
- they explain how learning takes place;
- they have practical implications in education (informal, non-formal, or formal, for children or adults); and
- there is a level of empirical support for the theory.

Tertiary education, and especially an MBA programme, deals with adult learning, and although the theory of andragogy does not strictly adhere to the abovementioned requirements (Taylor & Laros, 2014:145), the assumptions of andragogy are therefore first discussed in detail.

The following main philosophical arguments are used in this study (Ertmer & Newby, 1993:70):

- An *objectivist* epistemology implies that the teacher has the knowledge and imparts it to students (Staller, 2013:411). Typical objectivist styles are “lecturing” and “teaching”. The term “instructivist” is also sometimes employed as a subset of objectivism, since learning that takes place when the teacher passes knowledge to students in a one-way mode of communication signifies that the knowledge lies with the instructor, rather than with the students (Moon & Blackman, 2014:1176).
- A *behaviourist* epistemology views learning from the change in behaviour that the learning elicits (Murtonen *et al.*, 2017:115). Conditioning is the most common behaviourist epistemology, focusing on the observation of how people behave and on how to change behaviour or observable performance (Ertmer & Newby, 1993:48). Behaviourism is primarily based on the psychological principles of stimulus and response (Cain *et al.*, 2017:402). When learning, people respond, therefore learning is turned into behaviour. Pavlov is regarded as the first leading exponent of behaviourism with his theory of classical conditioning. Skinner expanded on that and focused on voluntary behaviour conditioning, as opposed to Pavlov's classical conditioning. From a behaviourist viewpoint, learning is dependent on the environment rather than on learner-related factors. (Thoutenhoofd & Pirrie, 2015:83). Learning elements best explained by the behaviourists include recalling of facts, generalisations, associations and automatically performing the specific procedure, but it is found to be inadequate for explaining higher level skills such as problem-solving and critical thinking (Kivunja, 2014b:100).
- A *cognitivist* epistemology tries to explain the cognitive processes that take place to enable learning. Cognitivism focuses on the mind, making sense of the world and the processing of information (Varela *et al.*, 2017:99). Learning takes place when there are discrete changes between states of knowledge. Learning is, therefore, very student-oriented (Young *et al.*, 2014:383). The role of beliefs, attitude and values is also influential in the learning process (Kivunja, 2014b:106). The main difference between the behaviourist and cognitivist views of mental activities is that the cognitivist approach focuses on those activities of the student leading to a response, whereas the behaviourist approach deals with the response itself (Woolfolk Hoy *et al.*, 2013:20). Types of learning that are best explained by cognitive processes are a higher order of reasoning, information-processing or problem-solving (Ertmer & Newby, 1993:53).

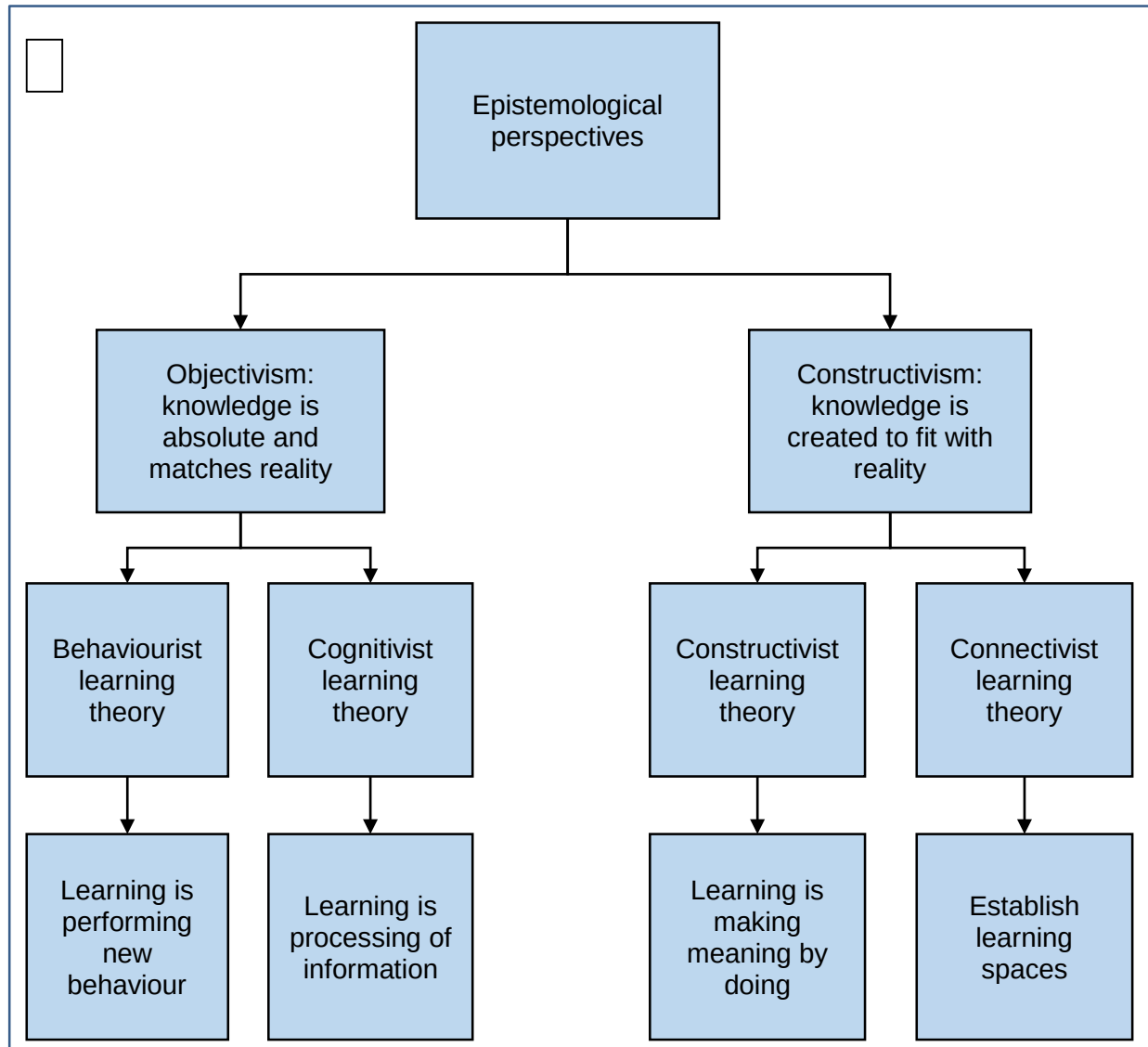
- A *constructivist* epistemology perceives that knowledge is constructed by students' perceptions and interaction with knowledgeable peers. This "constructing of knowledge" does not necessarily mean that new knowledge is generated, although this could indeed be the case (Boon *et al.*, 2017:17). Constructivism suggests that the student, together with his or her teacher and peers, is much more actively involved in the construction of the meaning of the facts or the available information. A distinction is made between constructivist epistemology, which refers to the philosophy that knowledge is constructed through our interactions with one another, and the constructivist learning theories, which explain the method of how students construct meaning (Kitto *et al.*, 2013:7). Constructivists create meaning, as opposed to acquiring it (Lowyck, 2014:18), and thus, there is not necessarily one correct interpretation of meaning (Flynn *et al.*, 2015:29). Knowledge emerges in contexts where the knowledge is relevant.

The most prominent advocates of constructivism were Jean Piaget, Lev Vygotsky and John Dewey (Kivunja, 2014b:97), who developed the epistemology of constructivism from their respective cognitivist backgrounds. Contrary to behaviourism, where learning depends on environmental factors, and cognitivism, where student factors are essential, the constructivist views both student and environmental factors to be critical because the interaction between these two creates knowledge. Importantly, constructivists posit that knowledge transfer can be facilitated by involvement in authentic tasks and getting meaningful context from the tasks (Ertmer & Newby, 1993:57). Constructivism has therefore developed from behaviourist, and especially from cognitivist theories (Imenda, 2018:94).

- A *connectivist* epistemology refers to the integration of principles explored by chaos, network, complexity and self-organisation theories. Learning is a process that occurs when connections are made between facts, data and other information. Learning, defined by connectivists as "actionable knowledge" (Kuntz *et al.*, 2017:191), can reside outside of ourselves (within an organisation or even in a database), is focused on connecting specialised information sets, and the connections that enable us to learn more are more important than our current state of knowing. Connectivism is driven by the understanding that decisions are based on rapidly altering foundations, as new information is continually being acquired. From a connectivist viewpoint, the ability to draw distinctions between important and unimportant information is vital. The ability to recognise when new information alters the landscape, based on decisions previously made, is also critical (Okojie & Yu, 2017:883). Connectivism has, therefore, emanated from constructivism as an epistemology that is shaped by the information age (Banihashem & Aliabadi, 2017:6).

Figure 2-2 shows a simple classification of how the different learning theories fit together in the main epistemologies. The details of these theories are described in more detail in paragraphs 2.4 to 2.8.

Figure 2-2: Epistemological perspectives



Source: Adapted from Harasim (2017:14)

2.3 Andragogy

Although most of the learning in ancient times resided in the teaching of adults (andragogy) (Harasim, 2017:44), the cognitivist movement has shifted the attention to the teaching of children (pedagogy), rather than adults (Mensah & Somuah, 2014:145). In the latter half of the 20th century (Cochran & Brown, 2016:80), there was a movement back from pedagogy to andragogy

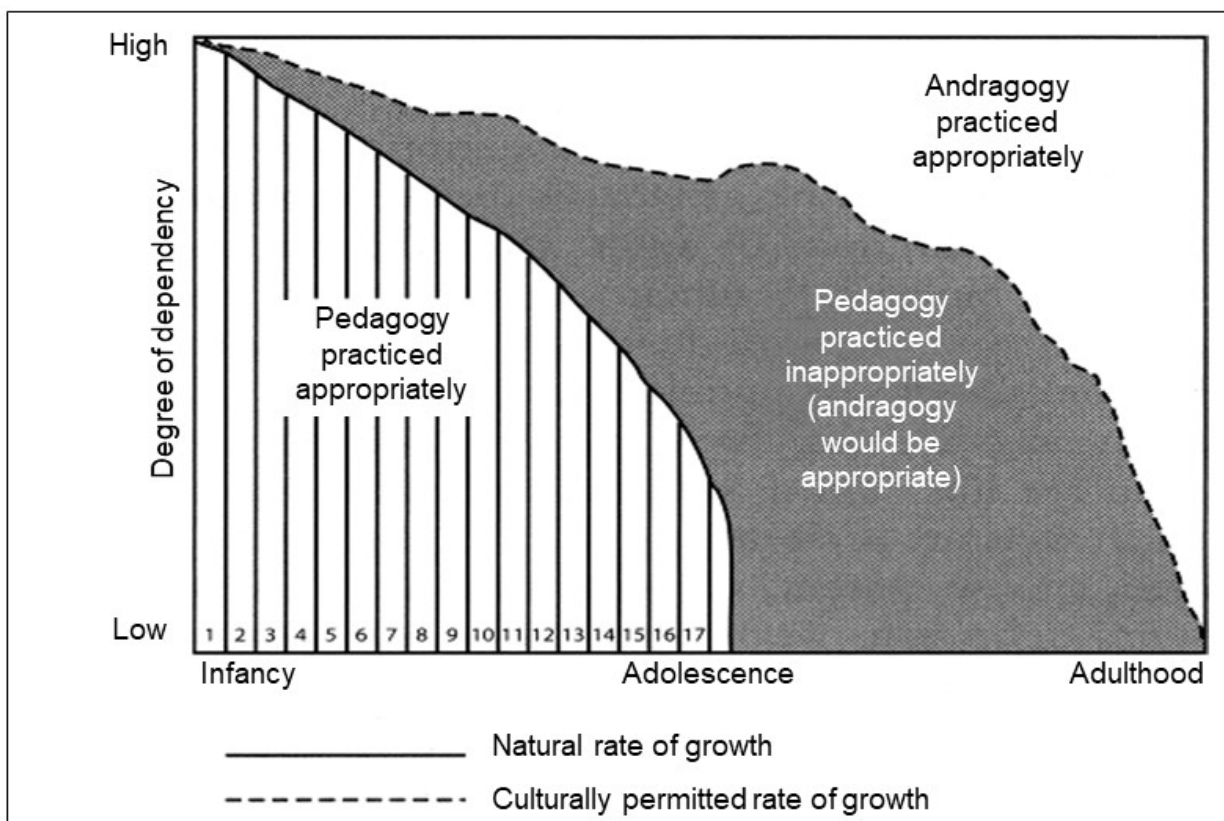
when Malcolm Knowles (1913-1997) described the concept of adult learning extensively in his book “The adult learner: a neglected species” (Knowles *et al.*, 1973:14). The term “andragogy” was initially used by Alexander Kapp in 1833 (Loeng, 2017:2; Ozuah, 2016:86) to refer to the teaching of adults, but the term was popularised by Knowles.

Malcolm Knowles listed a list of assumptions (initially 4, later expanded to 6), explaining how the learning of adults differ from the learning of children (Knowles *et al.*, 1973:14; Knowles *et al.*, 2015:17). These assumptions have received considerable research support since, and although being criticised (Hagen & Park, 2016:188; Muneja & Practice, 2015:60), the assumptions have not yet been proven wrong.

Although andragogy is not regarded as a theory per se, but is really rather a set of assumptions, most of the 20th century epistemic philosophies are included in the original description of andragogy (Knowles *et al.*, 1973:17).

2.3.1 Definition of an adult

Figure 2-3: Maturation according to Knowles



Source: Knowles *et al.* (2015:62)

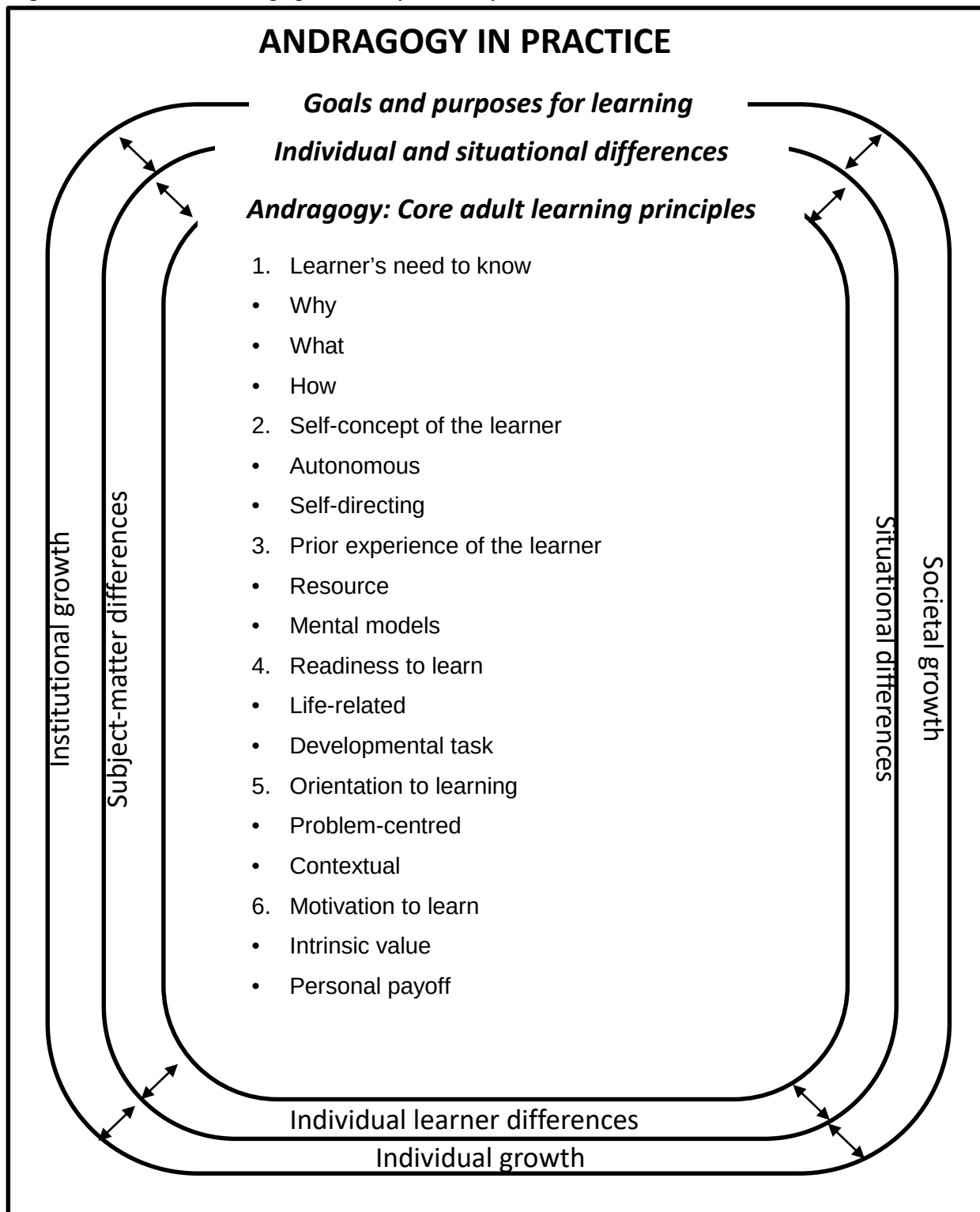
Because andragogy is a study of adult learning, it is necessary first to define what is regarded as an adult. There are various definitions. The most common one, age (usually 18 or 21) does not always describe adulthood accurately, especially in the context of adult learning, and the concept of “age of an adult” differs from culture to culture (Titmus, 2014:18). Adulthood is sometimes described in terms of whether education is a person’s primary activity (in which case the person is not regarded as an adult), or whether the person has interrupted his or her initial education for other activities or social roles (Titmus, 2014:20). In the case of an MBA student, the latter definition is appropriate for this study, because MBA students have other activities and social roles that supersede their status as students. Ozuah (2016:42) uses the term “self-concept” to define an adult as someone who has reached the age where he or she takes control of his or her learning.

Knowles *et al.* (2015:62) suggest that andragogic methods could be introduced at an early age, but that it should be used exclusively as soon as adolescence is reached. Figure 2-3 shows what Knowles’ definition of maturation involves.

2.3.2 The Assumptions of Andragogy

The six assumptions of andragogy are depicted by Knowles *et al.* (2015:62) in the following model, shown in Figure 2-4, which also shows how individual and situational differences, as well as goals and purposes for learning, could be incorporated in the Knowles model. The model shows that adult learning is shaped by subject matter differences, situational differences and individual student differences. However, the goal of adult learning is not just learning for the sake of individual growth per se, but it should also be beneficial to the growth of the institution and society.

Figure 2-4: The six andragogic assumptions in practice



Source: Knowles *et al.* (2015:14)

The assumptions that Knowles identified about adult learning, are:

Assumption 1: Adult learners need to know why they need to learn something. There is considerable evidence that adults research the reason for learning something (Moats, 2014:90) and the consequence of not learning something, before embarking on the real learning exercise (Entwistle & Ramsden, 2015:132).

Assumption 2: The self-concept of adults is such that they are autonomous and therefore, responsible for their own decisions and, therefore, for their own learning.

This assumption includes that, as a person grows and matures, his or her self-concept moves from one of total dependency to one of increasing self-directedness (Titmus, 2014:18). Adults are, therefore, more open to self-directed learning than children (Wolfson *et al.*, 2014:42).

Assumption 3: The role of experience: As individuals mature, they accumulate an expanding pool of experience that causes them to gradually become their own rich resource for learning. At the same time, this resource provides them with a broadening base of experience to relate their newly acquired knowledge with (Smith, 2017:13). Therefore, the use of lectures, canned audio-visual presentations and assigned reading provide a far less valuable learning experience for adults than the use of discussions, laboratory work, simulation, field experiences, team projects, and other action-learning techniques (Smith, 2017:9).

The main difference between the experience frameworks of adults and children is that adults shape their perceptions on their own experience, whereas children's outlook is influenced by the experiences of their relatives, friends, social environment and church. As children mature, their own experience replaces that of others (Dachner & Polin, 2016:149).

Hoeffler *et al.* (2013:339) distinguish between intensiveness (amount) and extensiveness (breadth) of experience as requirements for adult learning to take place. As people grow older, their scope of experience becomes more diverse (Hagen & Park, 2016:188). The experience level of a group of 10-year-olds will be far more homogeneous than that of a group of 50-year-olds. Understanding that MBA students come with a diversified experience field is essential in the design of a learning experience for a reasonably diverse group of adult learners such as MBA students.

Assumption 4: Readiness to learn: Closely linked with the previous assumption is the assumption of readiness to learn. This assumption states that adults learn something if they know they are going to need the result of the learning (Alexakis & Andert, 2015:158; Nordin *et al.*, 2016:100). In essence, children learn because they might need the knowledge sometime in future, whereas adults learn because they need it now (Saleh *et al.*, 2017:39).

It is, therefore, essential in the MBA environment to understand the learning needs of the students and to tap into these needs. There are ways of stimulating the readiness through exposure to higher levels of performance, as well as through some self-diagnostic procedures (McCauley *et al.*, 2017:322; Nordin *et al.*, 2016:100), and these ways should be utilised for maximum learning.

Assumption 5: Orientation to learning: Related to the assumption of readiness to learn, adults have a problem-centred orientation to learning, whereas children usually have a subject centred orientation (Ozuah, 2016:86). Children learn because it might help them solve future problems, whereas adults learn because they need to solve an immediate problem.

This assumption implies that adults often do not need to go to the foundational theory before starting to solve problems (Adams *et al.*, 2016:132). Also, it is essential to provide a context for learning material (Zabalegui *et al.*, 2014:197), and to integrate subjects with each other (Brauer & Ferguson, 2015:321). Such contextualisation will enable students to be self-motivated in their studies (Waite, 2017:15).

Assumption 6: Adults are intrinsically motivated to learn: Although some extrinsic motivating factors do apply to adults, adults are mainly intrinsically motivated (Beard, 2017:260). Mega *et al.* (2014:128) found that, amongst adults, motivation has a far stronger effect on learning than emotions or abilities would have. The implication of this is that, rather than motivating adults to learn, the teacher should tap into their hidden intrinsic motivation that already exists (Sogunro, 2014:34; Wlodkowski & Ginsberg, 2017:211). Self-directed learning, such as the use of MOOCs (Massive Open Online Courses) and non-formal education, rather than professional or formal education are often preferred methods for adults (Mega *et al.*, 2014:128). The impact on a face-to-face MBA programme is potentially huge, as potential students could easily follow other avenues than an MBA to further their knowledge.

2.3.3 Sub-disciplines of andragogy

Although the initial assumptions of andragogy have been challenged, no evidence provided yet is strong enough to disprove them. Considerable research has been done on andragogy in different fields. For example, “comparative andragogy” addresses differences in learning between different countries (Henschke, 2015:21; Park *et al.*, 2016:184), and other social variables (Nicolaidis & Marsick, 2016:19). Other fields where the assumptions have been applied include industry-specific andragogy, such as application in the military (McMahon, 2015:7), industrial (Sun & Kang, 2015:336), penological (Jukić & Radaković, 2016:430; Mijalković, 2017:83) and social, family and gerontological fields (Broecher *et al.*, 2017:484; Wolfson *et al.*, 2014:43). Andragogic principles are also widely used in the teaching of English as a foreign language to

non-English speakers (Saleh *et al.*, 2017:35; Villa, 2013:5008). The principles of andragogy are especially relevant in the 21st century due to the increasing need for life-long learning and the benefits that life-long learning could have on an individual (Broecher *et al.*, 2017:484).

2.3.4 Psychological and physiological support for andragogy

There is a growing body of research in support of the link between andragogy and brain processes. Hagen and Park (2016:177) found that andragogic principles apply, because of the neural networks in the brain. This link explains the relationship of the self-concept, experience levels and motivation with learning effectiveness (Beard, 2017:267; Hagen & Park, 2016:189). Similarly, a robust neural link has been established between self-regulated learning and emotions, especially positive emotions (Mega *et al.*, 2014:128). Ekoto and Gaikwad (2015:1380) mention that the emotional make-up of adults is different from that of children, but that this difference is yet to be included in research on andragogy. Considerable research has also been carried out on adapting adult learning to the digital era (Burton *et al.*, 2013).

2.3.5 Recent research on andragogy

A large proportion of recent research about andragogy revolves around andragogy in different academic disciplines. The theory has been criticised, but to date, the assumptions have not been revoked. Below follows a few of the arguments that critique the assumptions of andragogy.

The most significant criticism against andragogy is that it did not yet manage to elevate itself to the status of full-blown learning theory for adults (Taylor & Laros, 2014:145) and, as such, has been marginalised in terms of theoretical research. The effect of this marginalisation is reducing interest in andragogy research. Mezirow's theory of transformative learning, as a robust theoretical extension of andragogy, is attempting to address this shortcoming (Taylor & Laros, 2014:145).

Another criticism is that, in the theory of andragogy, the term adult has not been defined accurately enough (Lambert *et al.*, 2014:55). However, as shown in Figure 2-3, Knowles himself has addressed this issue by implying that the principles of andragogy should already be implemented during childhood learning (Knowles *et al.*, 2015:62). In the absence of an accurate definition of adulthood, it follows that the assumptions of andragogy as a one-size-fits-all theory can, therefore not apply (Lambert *et al.*, 2014:55).

One of the assumptions of andragogy is that andragogy advocates learner control of the learning process. Whether this control automatically exists has not been substantiated through research (Taylor & Laros, 2014:140).

Another source of criticism concerns the methods often used in research on adult learning. The research carried out about the benefits of andragogy as a learning framework often uses samples too small to draw meaningful conclusions (Taylor & Laros, 2014:140). However, it is acknowledged that most of these criticisms come from people who grew up in a framework of pedagogy, rather than andragogy. Cochran and Brown (2016:124) blame this on the lack of an instrument that can measure andragogic learning principles accurately. However, Ekoto and Gaikwad (2015:1380) do mention an “Adult Learning Principles Design Elements Questionnaire (ALPDEQ)” by Lynda Wilson as a validated instrument for measuring the six assumptions of andragogy and their application. The methodological criticism extends to the notion that a significant portion of the research on andragogy is descriptive (Caruth, 2014:34) and lacks trained professionals to measure beyond descriptive research (Henschke, 2015:20).

Traditional forms of assessment do not work for adults (Anderson, 2016:22) and most educators are either unaware of this or are hesitant to change their assessment methods to one that suits adults, such as project-based assessment. Bolton (2006:6) suggests rubrics as an assessment method. The assessment issue becomes even more complicated when adults learn in an online environment (Anderson, 2016:22). Schwarz and Leibold (2016) describe a “DIY grading” of online work by adults (i.e. a form of self-assessment), with significant successes being reported, while Sharifi *et al.* (2017:1449) claim that an e-portfolio works well.

The practice of critical reflection is a standard tool used in adult learning. Although this practice is not often mentioned in the original andragogic research, Leigh *et al.* (2015:16) reported on the benefits of reflection using andragogic teaching methods for pharmacy students, and it was also described by Schwarz and Leibold (2016).

Andragogic principles have been found valuable for the development of critical thinking skills (Gibby, 2013:173), and specifically to enhance corporate functioning (Henschke, 2016:24). These benefits have also been reported in training in the police system (Udrea, 2014:601)

In summary, all the above criticisms against andragogy point to insufficient evidence and serve as an indication that more research is necessary on the topic. In all the cases cited above, the assumptions are still accepted.

2.3.6 Learning points from andragogic principles

It must be kept in mind that typical MBA students are working adults, and therefore have sufficient experience to relate to the content being taught. They are self-motivated, time-constrained, autonomous, and they need to know why they learn something, and therefore, would prefer problem-based learning and experiential learning methods (Mihail & Kloutsiniotis, 2014:214).

Although an MBA group is reasonably homogeneous in terms of education level, their level of knowledge of specific topics differs considerably when embarking on MBA. An awareness of these different levels of subject knowledge is therefore essential to the lecturer, and ways to stimulate the motivation to learn the specific content should be found for those students lacking the relevant subject knowledge (McCauley *et al.*, 2017:322; Nordin *et al.*, 2016:100). Before embarking on the actual teaching exercise, the need for acquiring the specific knowledge first needs to be established (Entwistle & Ramsden, 2015:132).

Reflection on the knowledge gained could also be employed in the learning process when teaching adults.

2.4 Learning in ancient times

Teaching in ancient times was based on an objectivist philosophy, which implies that the teacher had the knowledge and imparted it to students (Tezci *et al.*, 2016:207). Typical objectivist styles are traditional “lecturing” and “teaching” (McHugh & Way, 2017:19; Päßler-Kuppinger & Jucks, 2017:75). The term often used for teaching in ancient times is “instructivism” (Sawyer, 2006:7).

In ancient empires, some great teachers taught adults using some remarkably “modern” assumptions and methods. Unfortunately, a large proportion of these methods were lost at the start of the dark ages (Harasim, 2017:14). Below follows a very brief description of the essence of learning in some of the main epochs and empires, up to the renaissance period.

2.4.1 Ancient China

The leading ancient Chinese philosophers were Lao Tzu and Confucius (Chamberlain *et al.*, 2016:362). Although Confucian education is often associated with memorisation, Confucius’ concept of knowledge included ongoing inquiry into everyday life issues, promoted inferential thinking, and facilitated self-examination (Ho, 2017:12). Confucius highlighted the need for students to take ownership of their learning and to be engaged in the process of learning (Thompson, 2016:627). Ancient Chinese philosophers, such as Confucius (551-479 BC) and Lao Tzu (661-ca 531BC), made extensive use of parables (Thompson, 2016:626), a predecessor to the case study method.

2.4.2 Egypt

Ancient Egyptian universities focused on studying the seven liberal arts (mystic science, philosophy, African history, science, mathematics, language and music) as a way to approach

divinity. The liberal arts were not seen as separate subjects; it was taught as an integrated whole (Pürcher *et al.*, 2016:827). Egyptian universities, notably Alexandria, were prominent centres of knowledge in the world and outlasted both the Greek and Roman empires (Schuenemann *et al.*, 2017:10). Three prominent Greek theorists studied in ancient Egypt: Socrates, Plato, and Pythagoras (Rutherford, 2016:41).

2.4.3 The Greeks

The Greeks became literate around 500BC (Havelock, 1977:369). With literacy came the Greek alphabet, literature, philosophy and also the first teachers. Most knowledge was regarded as “coming from the gods”, and teaching was aimed at adults, not children (Harasim, 2017:70).

Socrates (469-399 BC) was regarded as the first pedagogue (George, 2015:3973) and in his dialogues, with Plato, he mentioned some pedagogical principles. Socrates often used images and metaphors. He distinguished between perceptions and knowledge, and he stressed that the focus of teaching is understanding and therefore introduced questioning. According to Socrates, the focus of teaching is engaging, empowering and enlightening of students by making learning meaningful and relevant (George, 2015:3974). An important question stated by Socrates is called the learning paradox or the paradox of enquiry: *“I know what you mean, Meno. Do you see what a disputatious argument you are bringing down on us—how it is impossible for a person to inquire into what he knows or what he does not? He could not inquire into what he knows, for he already knows it and there is no need for such a person to inquire; on the other hand, he could not inquire into what he does not know, for he does not even know what he is going to inquire into.”* (Plato & Jowlett, 2013:80). In essence, it states that, if a person knows, he will not inquire, and if he does not know, he does not know that there is something to inquire about. Therefore, nobody

Socrates’ main contribution to the theory of learning is suggesting answers to the following questions (Harasim, 2017:28):

- What is knowledge? He distinguished between “trivial knowledge” and “important knowledge”, and stated that “important knowledge” concerns ethics and morals.
- Why learn? Ethical and moral instinct can only be brought to the surface through learning.
- How do we learn? Learning takes place when a student questions the wisdom of others while recognising his ignorance.
- From whom does one learn? A student needs other people to share their experience and wisdom. This sharing does not necessarily take place in a school environment.
- When does one learn? Learning takes place when dialogue is meaningful, and when a student sees his faults and weaknesses.

Plato (428-347BC), a student of Socrates, distinguished between knowledge gained through the senses and knowledge gained by reason. He introduced the idea of critical reflection (Schunk, 2012:5), and regarded instinct as an effective driver of learning. He also contended that context plays a vital role in learning, and that changing the context would enable new learning.

Aristotle (384-322BC), a student of Plato, asserted that learning takes place when one examines the knowledge of wise people and interpret it, doing self-examination while interpreting (Ozuah, 2016:80). Aristotle coined the principle of the “self-fulfilling prophecy”.

Pang (2008:200) describes the difference between the sophists and the Socratists, two contradicting philosophical schools in ancient Greece. The sophists pursued wisdom and relied on rhetoric or persuasion. The Socratists, on the other hand, required dialogue between teacher and student, and learning was therefore based on logic and critical enquiry. In the 21st century, there are still traces of both of these philosophies in higher education, although modern teaching methodologies focus more on the philosophy of Socrates (Pang, 2008:198).

2.4.4 The Romans

The Greek Empire was followed by the Roman Empire, and a fair proportion of Roman teaching was about teaching the Greek and Latin languages (Bloomer, 1997:77). The term “grammar school” therefore has its origins in the Roman Empire (Bloomer, 2011:53). Since the primary political agenda of the Roman Empire was military expansion, the focus of teaching shifted from educating adults to educating children, often in conquered countries. Most education, therefore, happened in the family, where the wealthy often used tutors (in many cases, slaves) from foreign countries. There was also a formal schooling system, focusing mostly on grammar and literature, as well as on the art of public speaking (Bonner, 2011:43).

Roman philosophers, such as Cicero (106-43BC) relied on dialogue to teach his followers (Ozuah, 2016:84), where he would often make a statement and students would criticise or defend it. Although stoicism (the philosophy that virtue was based on knowledge) has initially been a philosophy that spilt over from the Greeks (Habinek, 2017:38), Marcus Aurelius (121-180AD) described stoic philosophies in his memoirs (Aurelius, 2013).

2.4.5 Biblical learning

Teaching in the Bible, especially in the Old Testament, revolves around passing principles, history, wisdom, and prophecies from one generation to the other (Crenshaw, 2010:26). Although

the Old Testament provides written records of the Old Testament period, most of the teaching was conveyed orally from generation to generation (Quick, 2014:32).

In New Testament times, from the time when Jesus started teaching until Constantine the Great (between 30AD and 337AD), the focus was still mainly on the teaching of adults. An example of this is found in Matthew 19:13, where the disciples discouraged Jesus from talking to the children (Bible, 1974). Jesus' parables, found in the four Gospels, are strong predecessors of the case study method of teaching (Ozuah, 2016:84).

Mentorship, as a teaching method, with a strong emphasis on practical application, is also found in the New Testament and the early church (Rule, 2017:7). The growth of the church and the basis of discipleship is derived from the principle of mentorship (White, 2016:480).

2.4.6 The middle ages (5th to 15th centuries)

Learning in the early Middle Ages has mostly receded into the patriarchal philosophies of the old Testament (Rosser, 2014:93), where knowledge was passed from one generation to the next, mainly amongst the wealthy families, and formal literacy was confined to the monasteries (Cantor, 1960:67). Harasim (2017:69) describes the principal objective of monastic teaching as preparing new entrants into monasteries for transcribing the sacred books, therefore following a distinctly objectivist approach.

Although early Christianity closed down the leading universities in Egypt, leading to the start of the dark ages, the Moors exported the Egyptian model of learning from North Africa to Europe via Spain as early as the 10th century (Cook, 2014:685), and were to a large extent responsible for the later European university system. Universities in Europe only started developing during the late middle ages (Long, 2017:58). In the last part of the middle ages, there was also a growing focus on apprenticeships (Bednarski & Courtemanche, 2009:134).

2.4.7 The Renaissance

The Protestant Reformation and the Renaissance period introduced a new understanding of learning. Both leaders of the Reformation, Martin Luther and John Calvin, opposed the monastic teaching system and were strong advocates of people raising themselves through education and applying the education at work through the Protestant work ethic (Crisp, 2014:121). Martin Luther's translation of the Bible into German and Gutenberg's printing press suddenly made information accessible (Moodie, 2014:466).

The Renaissance period also sparked the beginning of humanism (Seigel, 2015:226). René Descartes (1596-1650) followed Plato's theory of rationalism (learning by reason) and introduced

doubt as a method of enquiry (Schunk, 2012:66). He regarded the ability to reason as the only distinguishing factor between humans and animals. Cartesian philosophies had a significant effect on the development of both behaviourist and cognitivist theories.

His contemporary, John Locke (1632-1705) regarded the new-born child's brain as a blank slate that had to be inscribed by the teacher and argued that all knowledge was therefore determined by experience, derived from sense perception. He regarded the impressions made on the mind when the child is young as more formative than later in the person's life since the early inscriptions on the blank slate define the direction of the mind. He is, therefore, seen as the father of empiricism (Nazar, 2017:236).

2.4.8 Learning principles from the ancient theories

In summary, various ancient theories contributed to the way learning is perceived in the 21st century. Based on the theories described above, the learning principles from ancient theories that are relevant to engaged learning are summarised in Table 2-1 in paragraph 2.9. Although many learning principles from ancient theories are embedded in current andragogic learning that is relevant to an MBA environment, the most significant contributions to andragogic learning are made by positivist (behaviourist) and post-positivist (cognitivist, constructivist and connectivist) epistemologies that were proposed in later centuries.

2.5 Behaviourist theories

The behaviourists of the 20th century tried to explain learning from the angle of studying the behaviour of animals and humans (Murtonen *et al.*, 2017:124). In essence, they maintain that certain stimuli prompt certain behaviours and that this is how learning takes place (Dietrich & List, 2016:278). These theories are therefore concerned with what happens in terms of a human's behaviour when he or she learns something, rather than what goes on inside the mind, although psychologists such as Pavlov have postulated physiological explanations for his findings (Agarkar & Brock, 2017:102; Jarius & Wildemann, 2017:322).

2.5.1 Edward Thorndike's connectionism

Connectionism (not to be confused with connectivism, as discussed in paragraph 2.8 below) refers to the connection between stimulus and reward and contends that learning takes place when successful practices are awarded (Esmaeili & Tafti, 2016:173; Naylor, 2017). A series of these connections between stimulus and reward can be linked together if they belong to the same action (Wasserman & Wasserman, 2016:20). Practice strengthens connections; therefore,

previously encountered situations help to transfer learning (Resnick & Schantz, 2017:431). Thorndike, therefore, advocated repetition in order to remember (Erlam *et al.*, 2017:786; Wang & Neimann, 2017:115).

2.5.2 Ivan Pavlov's Classical Conditioning

Ivan Pavlov experimented with dogs and found that a specific stimulus would elicit an involuntary response (Garofalo & Robbins, 2017:1; Leadbeater & Dawson, 2017:7844; McCullick *et al.*, 2017:35). Albeit closely related, this is not to be confused with Skinner's theory of operant conditioning (discussed in paragraph 2.5.4), where the responses are voluntary (O'Doherty *et al.*, 2017:99). Pavlov proposes that conditioning involves the connection between brain centres. Pavlov's experiments provided an essential step in the understanding of learning as a cognitive process (FeldmanHall *et al.*, 2017:1169).

2.5.3 Edwin R Guthrie's Contiguous Conditioning

Guthrie differed from Pavlov and Thorndike and maintained that, rather than a direct response to a stimulus, specific behaviour would be repeated if the same situation reappears (Cyphers, 2013:10; O'Connor, 2015:15).

2.5.4 BF Skinner's Operant Conditioning

Skinner's theory was derived from Thorndike's connectionism and was less intuitive than Pavlov's classical conditioning. Skinner maintained that learning results from voluntary responses to specific stimuli. For example, one can reinforce someone's behaviour by positively rewarding it, and one can reduce behaviour by negative rewards.

2.5.5 Edward Tolman's Sign Learning Theory

Tolman moved away from the behaviourist theories of Pavlov, Guthrie, and Skinner and based his theory on Thorndike's connectionism. He maintained that organisms, especially humans, are goal-oriented (Cross, 2016:22; Delamater & Lattal, 2014:4). Tolman's work is, therefore regarded as an essential bridge between behaviourism and cognitivism.

2.5.6 Learning principles from the behaviourist theories

In summary, the relevant learning principles that can be derived from behaviourist theories and that are relevant to the strategy for engaged learning in an MBA programme are summarised in Table 2-1 in paragraph 2.9.

2.6 Cognitivist theories

Whereas the behaviourists were principally interested in the behaviour resulting from learning, the cognitivists were more concerned about what is happening in the mind when learning takes place (Crook & Sutherland, 2017:26). Five prominent theories are linked to the cognitivist epistemology, namely the Gestalt theory (par 2.6.1), John Dewey's pragmatism (par 2.6.2), Jean Piaget's developmental stage theory (par 2.6.3), Lev Vygotsky's socio-cultural theory (par 2.6.4) and Mezirow's theory of transformative learning (par 2.6.5).

2.6.1 Gestalt theory

Gestalt theory is a collective term for several theories and laws regarding learning. Initially coined by Max Wertheimer, the Gestalt approach to learning implies that learning takes place when a student can understand the concept's entirety rather than its parts (Kumar & Nazneen, 2016:310). The German word "Gestalt" means "pattern". Gestalt theory tries to explain the mental process of learning. An essential aspect of Gestalt is phenomenology, which relates learning to real-life experiences. The human brain tries to make sense of stimuli, in a process called "isomorphism", to create a logical structure for the stimuli (Jarvis, 2015:93; Klapper, 2014:418).

The Gestalt theory contains some organisational laws (Hennissen *et al.*, 2017:316; Koffka, 1950; Olson & Hergenhahn, 2015:242):

- The first law is called the "factor of closure": The brain tries to create a complete picture, and when it receives incomplete information, it tries to complete the picture (Hamlyn, 2017:21) from previously acquired information.
- The second law is called the "factor of proximity": The brain maps those learning elements that it receives together as a whole, instead of separate elements. An excellent example of how the human brain tries to complete a picture is that, when reading, a person would not read every letter in every word, but instead recognise words in sentences. The same applies to thoughts, feelings and sounds (Grondin, 2016:99).
- The third law is called the "factor of similarity": Learning is facilitated when homogeneous groups are linked together and contrasted with groups containing different ideas. This process enables students to develop and improve critical thinking skills (Hamlyn, 2017:33).
- A fourth law is called the "figure-ground effect": The eye ignores spaces and instead sees whole objects (Frings & Rothermund, 2017:15; Knewstubb & Ruth, 2015:15; Pinna *et al.*, 2017:45).

- As new thoughts and ideas are learned, the brain makes connections, representing the links between concepts or ideas. This law is called “trace theory” (Koffka, 1950; Koffka, 2013:113; Olson & Hergenhahn, 2015:265).

The laws are always at work simultaneously (Jäkel *et al.*, 2016:7). A necessary implication of Gestalt theory is that, when incomplete information is presented, the student learns by putting the complete picture together in his or her mind (Kumar & Nazneen, 2016:234). This develops critical thinking and problem-solving skills. Another important implication is the development of the skill of seeing the “big picture” when learning is structured correctly. The theory also discourages the use of rote memory (Jarvis, 2015:92).

The most significant criticism against Gestalt theory is that researchers are primarily interested in problem-solving, and not in learning per se (Guberman, 2015:42). In Gestalt learning, the key to teaching new information is to follow instructional strategies that are taking into consideration the student's past and current experiences and perceptions (Hamlyn, 2017:201).

An important learning point from the Gestalt theory is that the broader context, commonly referred to as the “bigger picture” should always be considered in the design of learning experiences.

2.6.2 John Dewey

John Dewey (1859-1952) was a philosopher/psychologist and is generally regarded as one of the architects of pragmatism – the philosophy that evaluates theories or beliefs in terms of the success of their practical application (Russill & Philosophy, 2016:131). His educational theories focus mainly on children, rather than adults, but has essential elements to help understand adult learning. He argued that education and learning are social and interactive processes (Jarvis, 2015:90). He also believed that students thrive in an environment where they are allowed to experience and interact with the curriculum and that students should take part in their own learning (Monk, 2013:70; Savery, 2015:14). Dewey was adamant that learning should go beyond content knowledge (Sandars *et al.*, 2015:1041), but should include learning how to live and not just to acquire new skills, but to use those skills for the greater good (Tarrant & Thiele, 2016:66). He advocated that schooling should be instrumental in creating social change and reform. Dewey also proposed that students should be able to relate subject content to prior experiences, to deepen the connection with this new knowledge (Canboy *et al.*, 2016:456).

Dewey furthermore advocated a balanced approach, where the learner (a term that he used as a synonym for student, since he dealt with both adults and children) should determine the quality and quantity of learning, but where the subject matter is vital in the design of the educational experience (Schumacher *et al.*, 2013:1644). As such, Dewey is regarded as the father of

experiential education, which in turn was the root of problem-based learning, service-learning and work-integrated learning (Gupta & Chintalapati, 2017:47; Manolis *et al.*, 2013:51; Poore *et al.*, 2014:246).

On the role of the teacher, Dewey regarded the teacher not as someone to pass on knowledge, but as someone who must affect the student as an entire social, psychological and intelligent being. Therefore, character building is part of the calling of a teacher (Schumacher *et al.*, 2013:1640).

Major learning points from Dewey:

- Education is not just about subject knowledge. It is about shaping the person being taught (Schumacher *et al.*, 2013:1640; Tarrant & Thiele, 2016:66).
- Education should have a community impact (Tarrant & Thiele, 2016:66).
- Students should acquire skills that will enable them to make a difference in more than one possible vocation (Sandars *et al.*, 2015:1041).
- Action learning and experiential learning are significant results of Dewey's work (Gupta & Chintalapati, 2017:47; Manolis *et al.*, 2013:51; Poore *et al.*, 2014:246).
- A successful teacher should have an intellectual curiosity and a passion for knowledge, students, the classroom and for the methods of imparting that knowledge (Schumacher *et al.*, 2013:1640).

2.6.3 Jean Piaget

Jean Piaget's developmental stage theory was primarily focused on children's learning, but it also gave an insight into the cognitive nature of learning, also applicable to adult learning (Johnson *et al.*, 2015:178; Siegler, 2016:132). According to Piaget (1896-1980), children are trying to construct an understanding of the world around them (Lourenço, 2012:294; Lourenço, 2016:135). When there are discrepancies between what they know and the reality, they will adjust their ideas accordingly (Barrouillet, 2015:11; Carey *et al.*, 2015:53). Learning, therefore, takes place through two basic functions, assimilation and accommodation. In a changing reality, assimilation is how humans react to the new information. Assimilation explains how people fit their experiences into old ideas. Accommodation, in contrast, is how people fit their present ideas to new experiences and to a new understanding of the environment. Present ideas are adjusted and fit into the new perceived environment. Assimilation and accommodation form an iterative process, and as these processes continue, learning takes place as the person searches for equilibrium (Sukoriyanto *et al.*, 2016:1498). During this interactive process, learning takes place when students move from

equilibrium to disequilibrium and back to equilibrium on a higher level (Mensah & Somuah, 2014:170).

Piaget describes a child's cognitive development as happening in distinct stages. The most important criticism of Piaget's theory, one that Piaget himself acknowledged, is that learning does not take place in quantum stages, but in a continuous process (An & Carr, 2017:414; Lourenço, 2016:133). Another criticism is that development also depends on the aptitude of students. Some students might have an aptitude for mathematics, and specific mathematical skills will then develop more quickly than others. The theory also undervalues the effect of culture on development (Morgan & Harris, 2015:676).

Piaget's theory stopped short of adulthood, but there are various theories based on Piagetian theory that explain how adults develop further: Important factors for learning, according to Piaget are motivation, social and environmental contexts, methods of training, perseverance and emotional learning (Esmaeili & Tafti, 2016:178).

In the area of adult learning, the most important practical application of Piaget's theory is that learning should be learner centred, not teacher centred (An & Carr, 2017:415; Pezzuti *et al.*, 2014:222). As such, Piaget is regarded as one of the fathers of constructivism.

2.6.4 Lev Vygotsky's socio-cultural theory

Lev Vygotsky (1896-1934) was a Russian psychologist with theories similar to that of Piaget (Lourenço, 2012:294). Vygotsky emphasised the roles of social interaction and instruction. (Barker *et al.*, 2015:424). He proposed that social structures and social relations lead to the development of mental functions.

Compared to Piaget, Vygotsky's focus was more on the social environment that enables learning. He used the term "zone of proximal development (ZPD)" for those tasks that a child is busy learning to complete. In contrast to the constructivist approach (development precedes learning), the behaviourist approach (learning and development take place simultaneously) and the Gestalt approach (learning and development are separate but interactive), Vygotsky maintained that learning should precede development in the zone of proximal development. The role of the teacher or coach is to provide the structure for the child to move beyond the present developmental or maturational level. This process has later been labelled "scaffolding", referring to the support that the teacher gives to the student to move from the familiar to the unfamiliar. When the unfamiliar becomes familiar, the teacher then scaffolds learning to the next unfamiliar level, which is how learning takes place (Smagorinsky, 2017:74; Upham *et al.*, 2014:141). The

modern notion that all cognitive development takes place outside one's comfort zone is an essential corollary of Vygotsky's theory (Bodrova & Leong, 2015:374; Diallo *et al.*, 2014:26).

A significant contribution to learning theory by Vygotsky was his focus on the connection between the mental process and speech (both verbal and inner speech). The implication of this is that thought itself develops social skills (Alderson-Day & Fernyhough, 2014:113; Ren *et al.*, 2016:10).

In an experiment comparing the learning abilities of older versus younger adults, Derksen *et al.* (2015:622) found that younger adults initially learned faster than older adults, but that social interaction reduced the initial gap between the groups. Vygotskian theory does, therefore, apply to adults as well (Courela & César, 2014:111; Mary Wairimu, 2014:45).

The most important learning points from Piaget and Vygotsky for an MBA environment is that students should be stretched outside their comfort zone, that social interaction enables the learning process, and that the necessary support structures (scaffolding) support learning.

2.6.5 Mezirow's theory of transformative learning

The theory of transformative learning is focused explicitly on adult learning. Jack Mezirow (1923-2014) proposed a theory, claiming that perspective transformation is an essential precedent to learning and that adults learn by including their feelings, values and purpose in the process of making sense of their environment (David & Sepic, 1995:18). A significant event can, therefore, trigger an expansion of consciousness. In essence, the theory explains the learning that takes place when a disorienting dilemma occurs (Christie *et al.*, 2015:21).

The most significant criticism of Mezirow's theory is that it explains learning as rational. Subsequent research has verified the role of emotion in the learning process (Durant *et al.*, 2016:870). However, the growth in research on transformative learning has been so significant that it seems to have replaced andragogy as the dominant theoretical orientation to adult education (David & Sepic, 1995:25).

The implication of transformative learning on the teacher is that teachers must also continuously question their assumptions and beliefs during the learning process, but that teachers learn as much as the student in a well-defined learning setting (David & Sepic, 1995:26). The most important practical implication of transformative learning for MBA programmes is that a disorienting environment could be used to elicit specific learning (Christie *et al.*, 2015:21).

2.6.6 Learning principles from cognitivist theories affecting adult learning

The cognitivist theories all have in common that learning takes place as a person is trying to make sense of his or her environment. Implications of cognitive theories for the strategy for engaged learning in an MBA programme are summarised in Table 2-1 in paragraph 2.9.

2.7 Constructivism

Although Dewey, Piaget and Vygotsky were regarded as cognitivist scientists, their theories are seen as the roots of constructivism, referred to as cognitive constructivism (Schcolnik *et al.*, 2016:19). The difference between cognitivism and constructivism is that the cognitivists explain the process of learning that takes place in the mind, usually described in terms of the cognitive development of children, whereas constructivists are more concerned with the sense-making of information while digesting, communicating, and expressing the new knowledge (Kwan & Wong, 2015:78).

2.7.1 What is constructivism?

A **constructivist** epistemology (Von Glasersfeld, Piaget, Vygotsky, Dewey) perceives that knowledge is constructed from our perceptions and interaction with knowledgeable peers. Importantly, constructivism implies that knowledge is constructed for the individual. This construction of knowledge does not necessarily mean that new knowledge is generated, although this could be the case (Ertmer & Newby, 1993:69).

Sawyer (2006:7) states that real learning does not take place while listening, but while the student is busy constructing knowledge in his or her head, hence the term constructivism. This notion is central to the constructivist epistemology (Bettazzoli, 2015:2181; Bright *et al.*, 2016:96; Buell *et al.*, 2017:9393; Chiari, 2015:57; Dinneen, 2017:196; Doolittle, 2014:496; Gilakjani *et al.*, 2013:61; Gurses *et al.*, 2015:48; Hall *et al.*, 2013:20; Keengwe *et al.*, 2014:896; McCloughlin, 2016:80; Payne *et al.*, 2009:552; Schreiber & Valle, 2013:409; Thomas *et al.*, 2014:54; Von Glasersfeld, 2013:87; Yoders, 2014:19).

Constructivism relates to presentation, reflection, problem-solving and thinking (Doolittle, 2014:497) and is necessarily a process of learning that takes place as a student tries to make meaning of the available information. As the student systematically moves to the next level of experience, meaning is derived (Roessger, 2017:212) while data is conceptualised (Charmaz, 2014:3).

2.7.2 Different forms of constructivism

Over time the basic principles of constructivism, have given rise to a number of specialised theories, related to constructivism,

- **Radical constructivism:** The leading proponents of radical constructivism were Ernst von Glasersfeld and Humberto Maturana. Radical constructivism, according to Von Glasersfeld (2013:177), entails as its departure point that there is never only one correct way of thinking, and as such it disagrees with any behaviourist standpoint, since one stimulus could elicit more than one response. There is ample empirical evidence of the value of radical constructivism (Durán, 2014:189; McCloughlin, 2016:80), although social media and online communication, in general, are changing knowledge creation patterns (Riegler, 2015:12; Schrape, 2016:15). Many constructivists opined that, as social interaction patterns change, especially with the advent of cybernetics (the science of communication and control systems in both machines and living things), radical constructivism does not apply any more (Müller & Riegler, 2014:5), since programmable systems rely on the principle that single inputs would lead to single outputs.
- **Social constructivism:** Social constructivism focus on the learning that takes place during social interactions. (Hay, 2016:533). Social constructivists suggest that knowledge is primarily created when people interact (Schreiber & Valle, 2013:409; Thomas *et al.*, 2014:17; Yoders, 2014:19). Social constructivism has an essential bearing on group work: Whenever students are trying to make sense of the theory in a group discussion, knowledge creation takes place.
- **Expressive constructivism:** Richard Millwood's theory of expressive constructivism is essentially a corollary of social constructivism. Millwood (2014:59) proposes that knowledge is only really constructed when spoken or written. The implication of this is that students should be given the opportunity to express their learning.

2.7.3 Learning principles from constructivism

The constructivist epistemology is hugely applicable to engaged learning. Learning principles from the constructivist theories that could be included in a strategy for engaged learning in an MBA programme are summarised in Table 2-1 in paragraph 2.9.

2.8 Connectivism

Clarà and Barberà (2014:204) describe a new epistemology, called connectivism. This theory is based on Ivan Illich's concept of deinstitutionalisation of education (education should take place outside the school system) and is concerned with providing “educational spaces”, where students can make sense of the information available to them. It is still being debated whether connectivism fulfils the criteria of learning theory (Flynn *et al.*, 2015:55), as sufficient philosophical and psychological evidence is still being collected to support connectivism empirically. The basis of connectivism is that (1) learning consists of connecting nodes of knowledge; (2) learning happens outside and inside a human's brains; (3) knowledge is not propositional (i.e. it does not consist of known facts); and (4) knowledge is an emergent phenomenon (Duke *et al.*, 2013:12; Murdoch *et al.*, 2013:1564; Siemens, 2008:5).

Siemens (2008:5) proposes some *principles of connectivism*, which he believes addresses the limitations of traditional epistemologies in explaining learning in the information age. These principles are:

- The ability to see connections between fields, ideas, and concepts is a core skill.
- Nurturing and maintaining connections are needed to facilitate continual learning.
- Learning and knowledge rest in diversity of opinions.
- Learning is a process of connecting specialised nodes or information sources.
- Learning may reside in non-human appliances (a novel deviation from previous learning theories!)
- The capacity to know more is more critical than what is currently known.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is in itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Connectivists advocate “communities of practice” as an essential source of learning, because clustering of similar areas of interests allows for interaction and sharing necessary for learning to occur (Goldie, 2016:1067). Criticisms against this theory are that it does not address the Socratic learning paradox (which explains why someone would like to learn, as described in paragraph 2.4.3), that the learning network can contain non-human appliances and that it oversimplifies interaction (Flynn *et al.*, 2015:55; Goldie, 2016:1068). However, as online universities, MOOCs, social media teaching, information sharing, and other 21st-century technologies become more

prominent, the connectivist epistemology is likely to become more prominent (Clarà & Barberà, 2014:205; Conradie, 2014:2562; Dogan, 2014:30; Duke *et al.*, 2013:12; Goldie, 2016:1068; Kivunja, 2014a:83; Kropf, 2013:22; Reese, 2015:587), as it addresses learning issues that were not relevant yet when previous learning theories were postulated.

2.8.1 Learning principles from connectivism

Implications of connectivism for the strategy for engaged learning in an MBA programme are summarised in Table 2-1 in paragraph 2.9.

2.9 Summary of epistemologies

Since this discussion serves as a basis for an engaged learning theory, those philosophies, learning principles, elements that lead to increased engagement, definitions of learning, learning principles used and common practices that are discussed above, are summarised in Table 2-1. Before moving to the summary, it is, however, essential to briefly describe the decision rules that were used for compiling the table.

2.9.1 Decision rules on what to include in a strategy for engaged learning

Various learning theories try to explain how learning takes place from different angles, and are therefore not necessarily mutually exclusive. Furthermore, the different theories, as explained in this chapter, build on each other and even conflicting theories may contain overlapping learning principles.

The most important decision rule is, therefore, to decide which principles of the learning theories must be excluded, not included. The following principles from different learning theories are, therefore excluded in the discussion of engaged learning:

- If a theory has been disproven by subsequent research, no principles from that theory are included. An example is the monastic learning from the middle ages.
- If a theory has been displaced by another one, the latter explaining learning in more depth than the former, those principles that have been replaced are excluded, but principles common to both theories are included.
- Where two theories conflict with each other, it is not the purpose of this present study to act as a judge, mainly if the conflict results from conflicting philosophical or psychological viewpoints. Principles from these theories are therefore not necessarily excluded from this

discussion. Principles from both such theories could be used, as long as they lead to the objective - to design a strategy for engaged learning.

- Theories that relate specifically to pedagogy or cognitive development of children and that are not proven to apply to adults are excluded. However, if certain learning principles apply to both children and adults, such principles are included in the discussion.

Since the discussion of the different learning theories is aimed at finding elements that could be used in an engaged learning strategy for an MBA programme, the following principles are therefore included in the discussion:

- Since MBA students are per definition adults, andragogy principles that apply to adults are included.
- Principles that have been proven to lead to better learning are included.
- Any principle that enhances engagement, whether inside or outside the classroom, are included.
- Learning principles that have been proven to apply on a post-graduate level are included.

For the sake of completeness, the proponents of the different theories are listed. (Note, all information in the table has been cited earlier in this chapter. For the sake of ease of reading these citations are not repeated).

Table 2-1 Elements from different epistemologies to be included in an engaged learning strategy

	Andragogy	Objectivist (Ancient theories)	Behaviourist	Cognitivist	Constructivist	Connectivist
Learning philosophy	Knowledge is taken from the experience of the learner	Knowledge is passed on to the student	Learning results in modified behaviour	Learning is creating meaning in the mind	Knowledge is constructed by the learner	Knowledge rest in diversity of opinions
Major contributors	Knowles	Moses, Socrates, Plato, Jesus, Descartes, Locke	Thorndike, Pavlov, Skinner, Guthrie, Tolman	Wertheimer, Dewey, Piaget, Vygotsky, Mezirow	Dewey, Piaget, Vygotsky, Von Glaserfeld,	Siemens
Engagement elements	• Engage with learning background • Motivate the “how”	• Dialogue	• Reward and reinforce learning	• Community impact • Generic skills • Action as a vehicle for learning • Engage with background • Provide scaffolding	• Construct knowledge while interacting • Social impact • Group work • Leave time for dialogue	• Encourage different opinions • Continuous feedback • Networking
Definition of learning to tap into	• Focus on the “why” • Encourage independence • Use their experience • Stimulate readiness • Get from theory to problem-solving quickly • Tap into latent intrinsic motivation	• Focus on ethics • Use experts • Meaningful dialogue and debate • Systemic focus • Encourage questioning • Encourage mistakes	• Conducive environment • Use rewards and reinforcement	• Include the bigger picture • Consider the learner’s values and experience • Assimilation and accommodation • Socio-cultural environment • ZPD: Get out of ZAD	• Support construction of knowledge • Reflecting on knowledge • Group learning	• Use technology • Ensure different opinions • Up-to-date learning matter

	Andragogy	Objectivist (Ancient theories)	Behaviourist	Cognitivist	Constructivist	Connectivist
Learning principles towards engaged learning		• Theory should support practical application • Use systemic focus (bigger picture) • Encourage questions	• Conducive environment	• Encourage problem-solving, decision-making and critical thinking • Tap into their experience • Scaffolding • Shape the person, not the memory • Focus on generic skills	• Do not share knowledge • The student must construct his own knowledge • Reflection constructs knowledge • Leave time for spontaneous interactions • Group work creates knowledge	• Ensure “connecting the dots.” • Capture knowledge by technology
• Practices to include	• Use their environment • Independent work • Take them to their area of experience • Provide context and integrate • Be aware of individual differences (values, family, experience, language)	• Dialogue • Group discussions • Integrate with other modules	• Take them to the real world (from the classroom)	• Provide a support network • Experiential learning • Group work	• Community engagement • Workplace application of knowledge • Action learning • Reflection • Group work • Let them present learning points • Debates	• Use of technology • Real-time feedback • VERY recent knowledge • Use of Learning Management System (LMS)

2.10 A critical comparison of the different theories

A brief critical comparison of the different theories would not be appropriate without acknowledging that every theory views learning with information available at the time when the theory was first postulated. Every learning theory also looks at learning from a different angle, even though it may only be a slightly different angle, and that as one theory is built on the previous one, we start to get a better picture of learning. It must also be acknowledged that even the present view of learning is still incomplete, and as knowledge and technology develop, new theories will appear that would bring us closer to a real understanding of learning.

Although andragogy (as explained in paragraph 2.3) is not universally accepted as epistemology or learning theory, the different assumptions of adult learning are very applicable, and if an engaged learning strategy is applied to adults, such as in an MBA programme, the andragogic assumptions dovetail well with constructivist and connectivist learning theories.

Although some of the ancient theories (discussed in paragraph 2.4), notably those of Socrates, Confucius and the Egyptians, included some remarkable “modern” viewpoints, so many subsequent theories developed from them that a discussion of the ancient theories would not add additional value to this discussion. Since the start of the information age, the objectivist epistemology that was so evident in ancient times is at risk of becoming obsolete. However, objectivist teaching methods are still very evident in the typical “lecturing” methods that so often prevail in the 21st century. This obsolescence of instructivism is especially true if the connectivist standpoint holds that knowledge is not just only a human trait anymore, but that technology could become part of the knowledge and learning system. If this is true, the philosophy that maintains that the acquisition of new knowledge is a top-down passing-on process can impossibly be relevant any more, especially not for an engaged learning strategy.

Behaviourism (par 2.5) gave the world an insight into the effects of learning. Understanding conditioning from different angles is valuable in understanding the responses that certain stimuli will elicit. Although there are elements of behaviourism (such as the creation of an environment conducive to learning and the use of rewards and reinforcement) that could add value to engaged learning, the logic behind behaviourism would not lead to an engaged learning strategy.

The cognitivist epistemology (par 2.6) has to a large extent been able to explain the cognitive processes that happen during learning and has been instrumental in the development of subsequent epistemologies such as constructivism and connectivism, both of which are more applicable to engaged learning. Elements of the cognitivist learning theories that should be kept

in mind are the inclusion of the bigger picture in the learning process, to build on the student's set of values and experience and to use scaffolding to enable learning.

Engaged learning is, in essence, an application of the different methodologies (as elaborated on in chapter 3) that developed from constructivism (par 2.7). The logic that we construct knowledge in our minds as we apply it in our experience is relevant for engaged learning, whether that experience is in the community, at the workplace, or during classroom activities.

With the rapid development of technology in the 21st century, connectivism (par 2.8) could become the prevalent epistemology, provided it could be supported by sufficient research. In a real-time world, using the appropriate technology, and allowing enough interaction between different stakeholders, the understanding of learning could contain more of the connectivist epistemology than initially expected. With all these developments it is also evident that learning in an MBA programme is not just concerned with subject-related knowledge and skills, but, as already recognised by Dewey (Sandars *et al.*, 2015:1041), but the objective of learning is also to acquire those generic skills that will allow the student to make a difference in the community and elsewhere.

2.11 Chapter conclusion

In this chapter, learning was discussed from an epistemological viewpoint, scrutinising different learning theories for principles that apply to engaged learning. The principles that were found are summarised in Table 2-1.

With the half-life of new knowledge and theories continually reducing (Siemens, 2008:3), learning theories and methodologies are continuously being developed. However, some aspects of ancient learning philosophies still hold. Socrates' use of critical enquiry, the use of case studies by Jesus and Confucius, the systemic approach of the Egyptians and the Cartesian use of logic are still generally accepted learning principles in the 21st-century.

Although cognitivist theories had taken precedence over behaviourist theories in the 20th century, the behaviourist notion that learning results in a change of behaviour, is still as applicable today as it was when Pavlov's performed his experiments.

The fundamental cognitivist theories of the Gestalt movement, Dewey, Piaget and Vygotsky can still explain the cognitive nature of learning and form the basis of modern learning theories such as those based on constructivist and connectivist philosophies. The notion that knowledge is constructed either in the individual mind or in a social context is critical for most modern teaching

and learning methodologies. An important conclusion from the connectivist philosophy is that knowledge is not just created and stored in the human mind, but that this could happen technologically as well.

2.12 Chapter summary

Various learning theories and philosophies from ancient times to the present have been analysed, and elements that could be used in an engaged learning strategy were extracted from them. In addition to the applicable principles of andragogy, the most prominent epistemologies contributing to engaged learning are constructivist, cognitivist, connectivist and to a lesser extent behaviourist.

Chapter 3 contains a brief overview of a number of the latest 21st-century learning methodologies. Each of these will be assessed in terms of the learning principles that transpired from this present chapter. The deliverable of the next chapter will be a list of potential methodologies to be employed as part of an engaged learning strategy.

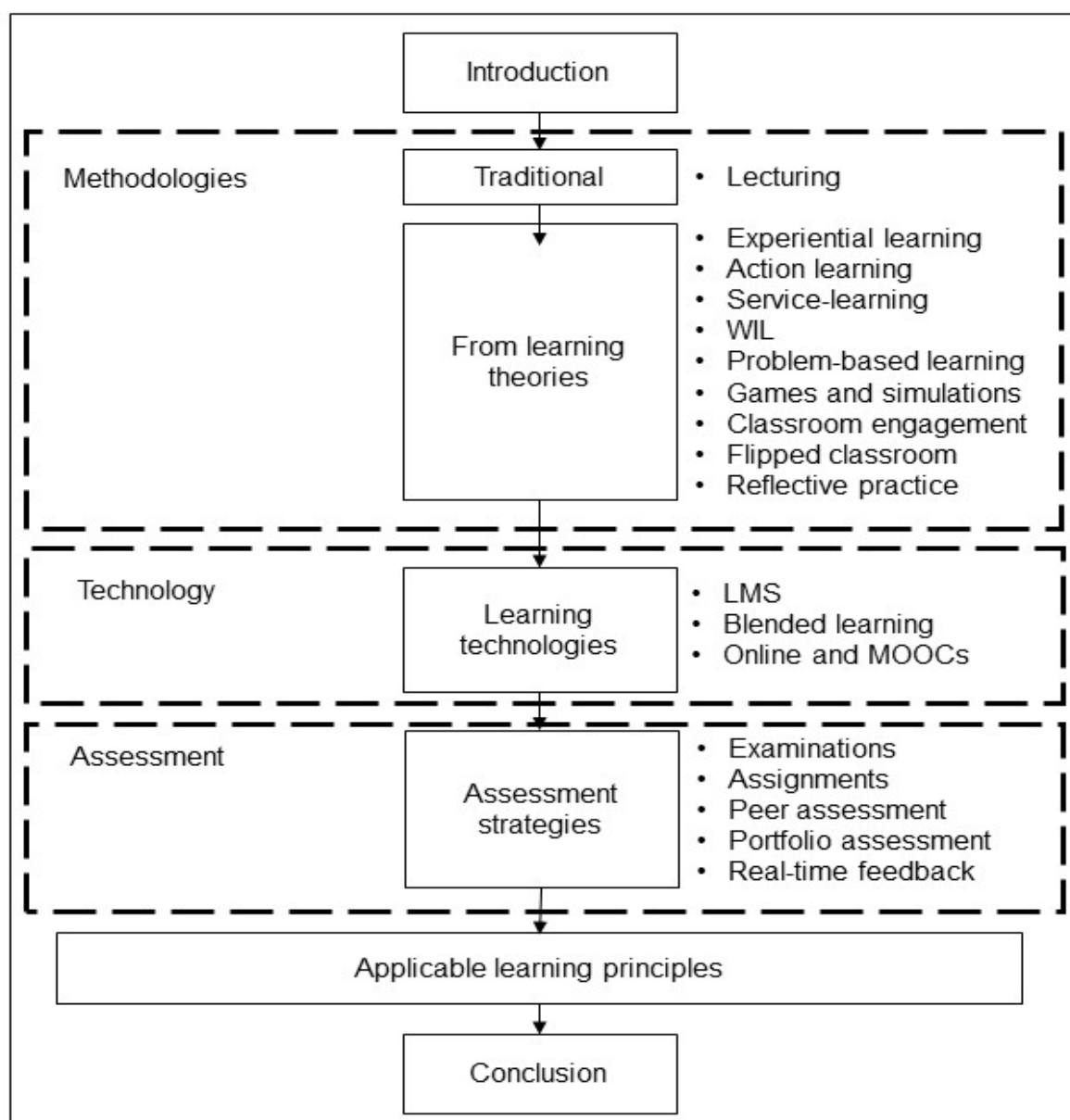
The contribution of this chapter is that the element of learning, as one of the deliverables of a strategy for engaged learning, is elucidated. In this chapter, the first secondary objective of the study is addressed, namely the analysis of the philosophical basis underpinning the theories of learning that would be applicable in an MBA programme.

CHAPTER 3

LEARNING METHODOLOGIES IN THE 21ST CENTURY

3.1 Introduction

Figure 3-1: Structure of chapter 3



In chapter 2, the learning theories were discussed from a philosophical and psychological angle, including practical implications for engaged learning. In this chapter, the discussion will be continued, but the emphasis moves to practical applications of the theory. Chapter 3 describes

some of the most prominent methodologies used in the 21st century that are aimed at ensuring that learning takes place.

A plethora of learning methodologies was developed from the behaviourist, cognitivist, constructivist and connectivist learning theories. Not all of these are equally applicable to an MBA programme where andragogic principles are used to teach adults. For the purpose of this study, the most prominent methodology that has developed from classical learning theories is traditional lecturing (par 3.2.1), and those that have developed from the more recent theories are experiential learning (par 3.3.1), action learning (par 3.3.2), service-learning (par 3.3.3), work-integrated learning (par 3.3.4), problem-based learning (par 3.3.5), games and simulations (par 3.3.6), various other student engagement activities in the classroom (par 3.3.7), the flipped classroom (par 3.3.8) and reflective practice (par 3.3.9). All of these are enabled by relevant learning and teaching technologies (par 3.4) and supported by appropriate assessment strategies (par 3.5).

Not all methodologies can be discussed here. Only methodologies that conform to the following criteria are described in this chapter:

- The methodology must have been used on adults, or at least be applicable to adults.
- There must be empirical proof that the methodology has a beneficial effect on learning.
- There must be some relationship with engaged learning. This could be a direct relationship, implying that students are actively engaged in the learning process using this methodology, or even an indirect relationship in that this methodology contains some aspect of engaged learning or some method that could be used in engaged learning.

Each of the methodologies will be described and then discussed using the following subheadings:

- The philosophical foundation of the methodology.
- A very brief history of the method and its application.
- Evidence of the success of this methodology, which could include advantages, disadvantages, challenges and other practical implications.
- Elements of this methodology that could be employed in an engaged learning strategy. In the case of some methodologies, it could be that the whole methodology is applicable and could be used as is.

Learning technologies and assessment strategies will then be briefly discussed separately.

3.2 Methodology resulting from classical learning theory

3.2.1 Traditional lecturing

Lecturing is widely used in the traditional higher education classroom (Heck & Bacharach, 2016:25). In most countries, the typical classroom setup in universities is an auditorium (Feng & Yuran, 2014:13) and the typical teaching method is a lecturer that is standing in front of the class, sharing his or her knowledge with the students, with or without the help of blackboards, whiteboards, videos or PowerPoint slide shows.

3.2.1.1 The philosophical foundation of traditional lecturing

Traditional lecturing is based on an objectivist (instructivist) epistemology, as it is teacher-focused and primarily consists of a unidirectional sharing of information (Harasim, 2017:6).

Traditional lecturing often results from lecturers merely following the example of their lecturers, rather than through research-based practice (Prosser & Trigwell, 2014:794). The psychological basis of a “monkey-see-monkey-do” practice is fundamentally behaviourist, where it is assumed that particular behaviour will elicit a specific response. For example, a lecturer assumes that his students will learn if they follow the example of their lecturers, simply because they themselves have learnt (Harasim, 2017:6).

3.2.1.2 History of traditional lecturing

The development of the traditional, auditorium-based lecturing method is inextricably linked to the growth of student numbers and an increasing students-to-lecturer ratio. While teaching in ancient times was often on a one-on-one basis (as seen in the relationships between Socrates and Plato, and between Plato and Aristotle), the need for educating larger groups of students at the same time led to traditional classroom-based lecturing methods (George, 2015:3973; Wastell, 2014:651; Waterfield, 2009:28). As the numbers further increased, classrooms made way for auditoria (Feng & Yuran, 2014:13). This could easily be seen in the simple layout of teaching facilities in most countries during different stages of a child’s development, where, in a nursery school, small groups of children are sitting around tables, in primary and high school children are sitting in classes of 30 to 40 at desks, often arranged in rows or similar patterns, and in universities large groups of students fill auditoria (or members of a congregation fill a church that is organised in rows), simply because the numbers do not allow for any other configuration (Prosser & Trigwell, 2014:794).

It could, therefore, be construed that lecturing becomes the normal mode of teaching when class sizes are too large for other methods of teaching (Hornsby & Osman, 2014:718). The concept of

large classes is defined differently in different environments, but it would suffice to use the term “large class” to refer to any class that is too large to allow interactive teaching methods. Also, where there is a shortage of lecturing staff, faculty are sometimes forced to revert to traditional lecturing as a teaching method (Maringe & Sing, 2014:780) to handle the sizeable student-to-lecturer ratio. Prosser and Trigwell (2014:784) list eight characteristics of large classes that relate to the effectiveness of lecturing as a teaching method:

- in large classes lecturers have to rely on lecturing as a method of instruction;
- students in large classes are less actively involved in the learning process;
- in large classes, the lecturer can interact less frequently with students, and the quality of feedback reduces;
- in a large class students’ depth of thinking reduces;
- in a large class it is more challenging to reach course objectives, to do proper assessment, and to take learning outside the classroom;
- in general, learning and performance of students is lower in large classes;
- student satisfaction is less in large classes than in smaller classes; and
- lecturer ratings are lower in large classes than in smaller classes.

3.2.1.3 Evidence of traditional lecturing success

Traditional lecturing is often the standard method of teaching, due to many lecturers and professors being academic specialists rather than necessarily teaching specialists (Oleson & Hora, 2014), and that they have therefore developed their lecturing style by mimicking their professors. The most significant benefit of traditional lecturing is still that it can accommodate larger student-to-lecturer ratios. Gonzalez (2014:19) compared the success of traditional teaching with blended learning methods and found these alternatives to traditional lecturing to be more effective than traditional lecturing in stimulating learning. To increase the effectiveness in handling large groups, Seroussi and Sharon (2016:119) mention the possibility of lecturing as a teaching method supplementing other blended learning methods.

3.2.1.4 Elements of traditional lecturing that could be used in engaged learning.

Where the students’ foundational knowledge of the subject varies significantly upon starting their study, especially in a part-time MBA group, it sometimes is necessary for lecturers, as subject experts, to explain some specific subject matter. Although lecturing could serve this purpose, it should be limited to short periods. Lecturing is often used at the beginning of a semester when students are still being familiarised with alternative teaching methods. Beyond this, traditional

lecturing should be avoided, especially in an MBA programme that is intent on engaging students while learning.

3.3 Methodologies resulting from modern learning theories

3.3.1 Experiential learning

Experiential learning is defined as learning through experience by getting in contact with the reality that is being studied (Casillas & Moreno-Menéndez, 2014:100; Lui *et al.*, 2016; Zimbardo *et al.*, 2016:AX18). David Kolb (2014:xviii), who was one of the initial advocates for experiential learning, describes experiential learning as a “particular form of learning from life experience”. Typical examples of experiential learning are the on-the-job learning that takes place while an artisan is engaged in his apprenticeship or laboratory work being performed by science students.

3.3.1.1 The philosophical foundation of experiential learning

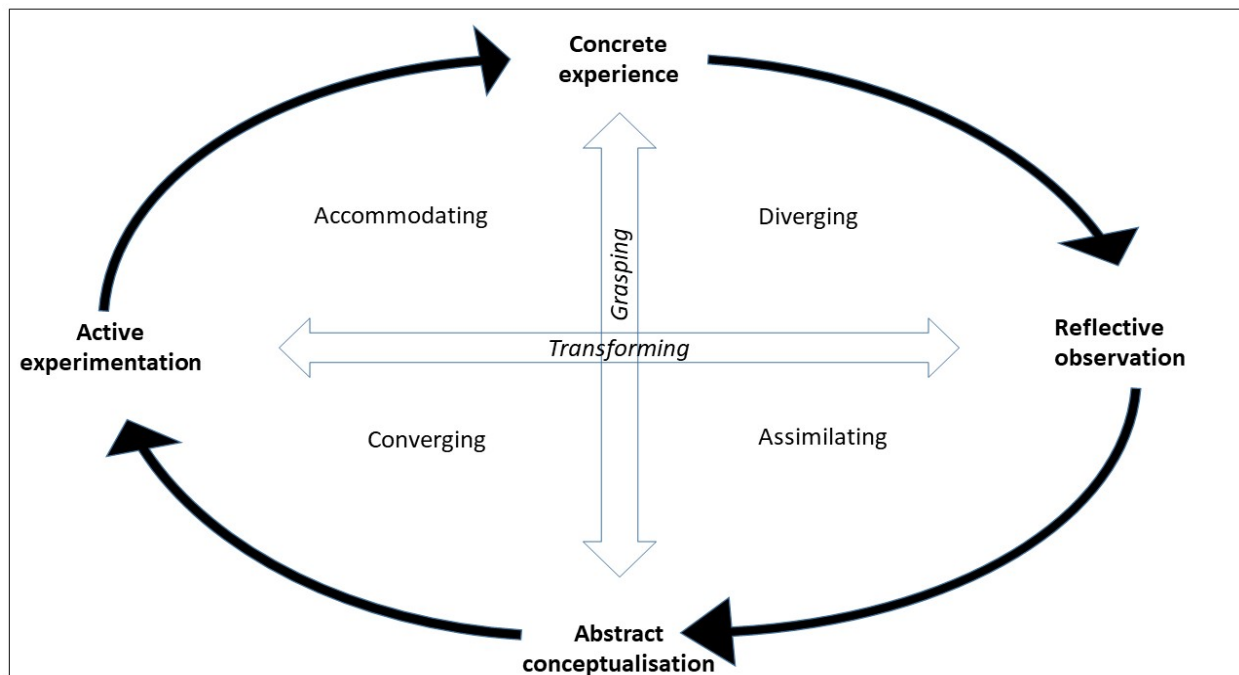
Experiential learning is a direct result of the **constructivist** epistemology, as described in paragraph 2.7, where students construct their knowledge while interacting with the reality being studied, although it is underpinned by elements of behaviourism and cognitivism. The basic premise of experiential learning was proposed by John Dewey, but contributors such as Jean Piaget also helped shape the philosophy behind experiential learning.

3.3.1.2 History of experiential learning

John Dewey is generally regarded as the father of experiential learning (Gupta & Chintalapati, 2017:47; Manolis *et al.*, 2013:51; Poore *et al.*, 2014:e246). Following substantial work done by the cognitivists Bandura and Houle, who explained that knowledge creation and learning is a continuous and iterative process (Deslauriers *et al.*, 2016:310; Hoover & Giambattista, 2014:36; Lyons & Bandura, 2017:152), and based on an original model by Kurt Lewin, David Kolb proposed the experiential learning model to understand better the mechanism involved in experiential learning (Manolis *et al.*, 2013:44). Kolb's has postulated a learning theory, based on an earlier model by Kurt Lewin, which he calls the experiential learning cycle, shown in Figure 3-2.

Learning from experience, according to the learning cycle, entails that a person experiences something concrete, and when he or she stands back (diverge) and reflect on the experience, learning takes place. An example is that an MBA student visits a manufacturing site to experience quality management first-hand. Learning takes place when he or she reflects on his or her experience in the factory. From the reflection, he or she then forms an abstract concept (in this case, of quality management) through assimilation, as described in Piaget's theory in paragraph 2.6.3, which leads to further experimentation (in this case, possibly by implementing some of the

Figure 3-2: Kolb's learning cycle



Source: Kolb and Kolb (2009:44)

quality principles at his or her own workplace). While accommodating the new experience (as described by Piaget in paragraph 2.6.3) it leads to the following experience (possibly at his or her own workplace, this time), where the cycle starts again. Experimentation and reflection are on a continuum of transforming knowledge, while experience and conceptualisation are on a continuum of grasping the concepts. The cycle explains how learning through experience leads to more advanced levels of knowledge, as described in methodologies such as service-learning, project-based learning, action learning and work-integrated learning (Kolb & Kolb, 2009:45).

The above cycle shows how experiential learning follows from the behaviourist, cognitivist and constructivist points of view, where students construct knowledge in their heads while making sense of it, and then make sense of it while experiencing it (Manolis *et al.*, 2013:50; Schenck & Cruickshank, 2015:93).

3.3.1.3 Evidence of the success of experiential learning

The success of experiential learning in higher education is widely documented in business education fields such as lean management (De Zan *et al.*, 2015:353), information systems (Terrell, 2014:9), corporate social responsibility (Setó-Pamies & Papaoikonomou, 2016:536),

accounting (Bublitz *et al.*, 2015:390), sales education (Alvarez *et al.*, 2015:242) and general business education (Ferguson *et al.*, 2016:9) among others. Wieman (2014:8320) found that pass rate increased from 67% to 78% in science, technology, engineering, and mathematics (STEM) education when switching from traditional to more active learning methods such as experiential learning.

Although experiential learning is mostly used in higher education, it is also widely used in the corporate sector, with significant successes being reported (Pulakos *et al.*, 2015:75). Action learning, as described in paragraph 3.3.2 below, is essentially the application of experiential learning in the corporate sector.

What makes experiential learning so applicable is that it is the basis of many other methodologies used in the 21st century. Experiential learning is the fundamental methodology on which action learning, work-integrated learning, project-based learning, service-learning and many more learning methodologies are built (Mansker *et al.*, 2016:9; O'Neil & Marsick, 2014:219; Yu *et al.*, 2014:334).

Many benefits of experiential learning are reported. The first general benefit is improved and accelerated learning. Konak *et al.* (2014:20) found that student-to-student interaction in an experiential learning project (using all the elements of Kolb's cycle) did lead to better competency development than traditional lecturing when tested on students in a computer laboratory. Experiential learning is also useful in reducing the time to master orientation problems (Zigmont *et al.*, 2015:92) and to achieve better learning outcomes in medical education (Decker *et al.*, 2015:319). Hodge *et al.* (2014:15) also reported better "core learning" amongst business students and, in a meta-analysis of 40 studies, Burch *et al.* (2014:282) found overwhelming evidence that experiential learning enables better learning than traditional methods.

Other benefits are that experiential learning projects build community among multiracial groups (Konak *et al.*, 2014:20) and develop student identity (Daniels & Brooker, 2014:74).

In terms of the development of generic skills, the following skills have been proven to develop during experiential learning projects: leadership, teamwork, decision-making, self-confidence, communication skills, creativity and critical reflection (Fuller & France, 2016:205; Hodge *et al.*, 2014:15).

- Elements of experiential learning that could be used in engaged learning.

The basic principle of experiential learning fits well into the paradigm of engaged learning. The definition of experiential learning (taking people to the reality of the subject being studied) dovetails perfectly with letting postgraduate business and management students learn while they

are engaged in their place of work, or in any other setting where they experience the principles being taught first-hand. The practice of reflection that is central to experiential learning also dovetails well with other elements of engaged learning. In essence, experiential learning forms the basis of most methods where engagement is a primary focus and is key to the success of engaged learning.

3.3.2 Action learning

There is a significant difference between experiential and action learning: The official definition of action learning, according to the World Institute for Action Learning is a process that involves a small group working on real problems, taking action, and learning as individuals, as a team, and as an organisation. The elements of this definition that distinguish it from experiential learning are:

- It has a corporate focus, whereas experiential learning has a more academic focus (O'Neil & Marsick, 2014:219). The focus for action learning is on corporate knowledge systems and institutional learning (Boshyk, 2016:viii).
- It has a small group focus (Zuber-Skerritt & Teare, 2013:28), and these are often cross-functional groups. Although many forms of experiential learning take place in groups as well, group work is very specific to action learning. Experiential learning could be individualised (Fredericks *et al.*, 2014:32).
- It is problem-centred. Experiential learning could involve a science experiment in the laboratory, aimed at showing a scientific principle to a student through experience. Action learning is specifically aimed at solving complex problems (Lehmann & Gilson, 2014:962).

3.3.2.1 The philosophical foundation of action learning

Since action learning is closely related to experiential learning, the same constructivist philosophical grounding applies to action learning that applies to experiential learning.

3.3.2.2 History of action learning.

Action learning is based on the work of Reg Revans in 1972 (Revans, 2011:6) as a corporate problem-solving methodology, built on certain assumptions. These assumptions include that students (or workers in the corporate environment) must be aware of the gaps in their knowledge, that they must be motivated to solve problems and that they must be willing to ask questions in order to get a solution to their problem. Another important assumption is that there is a relationship between action and reflection, as explained in Kolb's learning cycle (Figure 3-2). Most of the development of action learning theory happened in the corporate sector, as companies such as

DaimlerChrysler, General Electric, Philips and Siemens embraced the philosophy of action learning and adapted the original work by Revans to suit their needs (Boshyk, 2016:xii).

3.3.2.3 Evidence of the success of action learning

There is abundant educational and psychological evidence about the benefits of being actively involved in the learning experience (Miller & Metz, 2014:251). Boshyk (2016:xii) claims significant successes of action learning in the corporate sector, including increased bottom-line profits, leadership development and teamwork. Edmonstone (2015:140) lists the following benefits of action learning as a problem-solving method:

- breadth of understanding, which leads to relationship building across the organisation;
- ability to make sense of ambiguous data to solve complex problems;
- building the capacity to understand and initiate organisational changes;
- focusing on what makes a difference;
- action-focused and proactive, results-driven individuals;
- improved group work;
- flexibility to respond to change;
- sharing of knowledge; and
- problem-solving.

3.3.2.4 Elements of action learning that could be used in engaged learning.

Since action learning is essentially a corporate problem-solving method, rather than an academic learning method, the principles of action learning are not directly employable in engaged learning in tertiary education. However, since problem-solving is one of the skills required of an MBA graduate that has gone through an engaged learning programme, action learning becomes very relevant. The principle that can be used in engaged learning is to use group work in a corporate or work environment to solve real-life problems. However, these have already been discussed under paragraph 3.3.1 (Experiential learning).

3.3.3 Service-learning

There is an increasing move towards outreach or community engagement in both the corporate and the academic sectors (Holland, 2016:71). In higher education, and increasingly in secondary education as well, this has given rise to a methodology called service-learning (Bauer *et al.*, 2015:92; Ferrari & Chapman, 2014:6), where the learning is packaged inside community engagement projects that students undertake.

Most definitions of service-learning include both service to the community and learning tied to the academic curriculum (Billig & Waterman, 2014:ix). Service-learning is a specialised form of experiential education (Mansker *et al.*, 2016:9), with community service at its centre (Donahue *et al.*, 2015:36).

Service-learning is designed to be a high-impact activity. Kuh (2013:3) lists six attributes of effective high-impact programs: (i) students spend a considerable amount of time on meaningful tasks; (ii) faculty and student peers interact about substantive matters; (iii) students experience diversity through contact with people different than themselves; (iv) students receive frequent feedback; (v) activities apply to different settings; and (vi) new connections are made with peers, faculty, community or the university. A well-designed service-learning project would fulfil all these attributes (Hatcher & Studer, 2015:18). One of the challenges of service-learning in educational settings in America and Europe is that service-learning is traditionally seen as white students rendering the service to non-white recipients (Bocci, 2015:7; Donahue *et al.*, 2015:36). Service-learning in the developed world has therefore developed an element of international outreach (Taylor *et al.*, 2017:702) that is less common when service-learning projects are undertaken by institutions in developing countries (Clark, 2016:87; Coryell *et al.*, 2016:421; Janse van Rensburg & Du Toit, 2016:13; Kiely & Hartman, 2015:49; Le & Raven, 2015:156).

A vital element of service-learning is that the interaction with the community does not happen with the “community” in general, but with some kind of community organisation or community partner. Linking up with the correct partner is a critically important for the success of a service-learning project (Cronley *et al.*, 2015:288; Hatcher & Studer, 2015:18; McDonald & Dominguez, 2015:55).

There are specific steps in the structuring of service-learning projects. The first is to decide what the aim of the service-learning project is. Once that is done, the selection of the correct partner needs to take place, and permission needs to be obtained (Porter *et al.*, 2016:356). Then only can the project be planned. Important to realise is that service-learning revolves around projects, not just around mere open-ended philanthropy (Hatcher & Studer, 2015:16). In the actual design, Hatcher and Studer (2015:15) stress the importance of letting the students read on community involvement, rather than just on subject-related theory. Lecturers should also build class activities into the design that would encourage them to interact with community leaders. Design elements that are easily forgotten when designing a service-learning project are ethical clearance (Le & Raven, 2015:156; Porter *et al.*, 2016:355) and managing the expectations of all the stakeholders (Brandes *et al.*, 2017:158).

The basic structure of service-learning projects, suggested by Brandes *et al.* (2017:156) include identification of the problem, need or goal, clarifying values, identification of resources, decision,

planning and implementation of the project, evaluation of the attainment of the goals, and feedback. They also suggest starting with the last steps: goal attainment, and then working backwards in the whole planning process. A common element in research about the design of service-learning interactions is the constant referral to reflection as a critical element of the success of service-learning projects.

3.3.3.1 The philosophical foundation of service-learning

Since service-learning is a specialised form of experiential learning, the philosophical foundation of the service-learning is also essentially constructivist (Staton & Grande, 2017:3), with its roots in cognitivism.

3.3.3.2 History of service-learning

Although the roots of service-learning can be traced back to scholars such as John Dewey, as described in paragraph 2.6.2, the real history of service learning is difficult to track. The origins of service-learning date back to early Judeo-Christian practices where teaching was combined with caring for each other (Bowles *et al.*, 2017:436; Tiglioglu *et al.*, 2014:103; Yates, 2013:47). Similar practices are reported from other religious communities (Shumer *et al.*, 2017:6). Building on this practice, it developed organically since the 1950s and elements of service-learning were documented in the 1970s in the USA, often as resistance to the Vietnam war (Shumer *et al.*, 2017:6). Service-learning officially became noted as an educational methodology in the late 1980s and early 1990s, when outreach programmes started having an official academic component associated with them (Billig & Waterman, 2014:2; Lavery & Coffey, 2016:9; Miller & Gardinier, 2016:54).

3.3.3.3 Evidence of the success of service-learning

Success in service-learning projects is generally regarded as being successful in terms of three issues, namely that real learning takes place, a difference is made in the community and there has been some attitudinal change amongst students rendering the service (Dienhart *et al.*, 2016:308; Hauver-James & Logan, 2016:34; Stover *et al.*, 2016:176).

Although most successes of service-learning projects are documented in sciences, such as sociology (James & Logan, 2016:35; Opatrny & Statham, 2014:119), different medical study fields (Clark *et al.*, 2015:21; Foli *et al.*, 2014:81; Nelson *et al.*, 2017:87; Temple & Mast, 2016:20; Yamashita *et al.*, 2013:162), teacher education (Walton *et al.*, 2014:332) and psychology (Chan *et al.*, 2016:35; Meyer *et al.*, 2016:124; Vartanian *et al.*, 2017), successful service-learning projects have also been documented in business education (Hervani *et al.*, 2015:40; Makani &

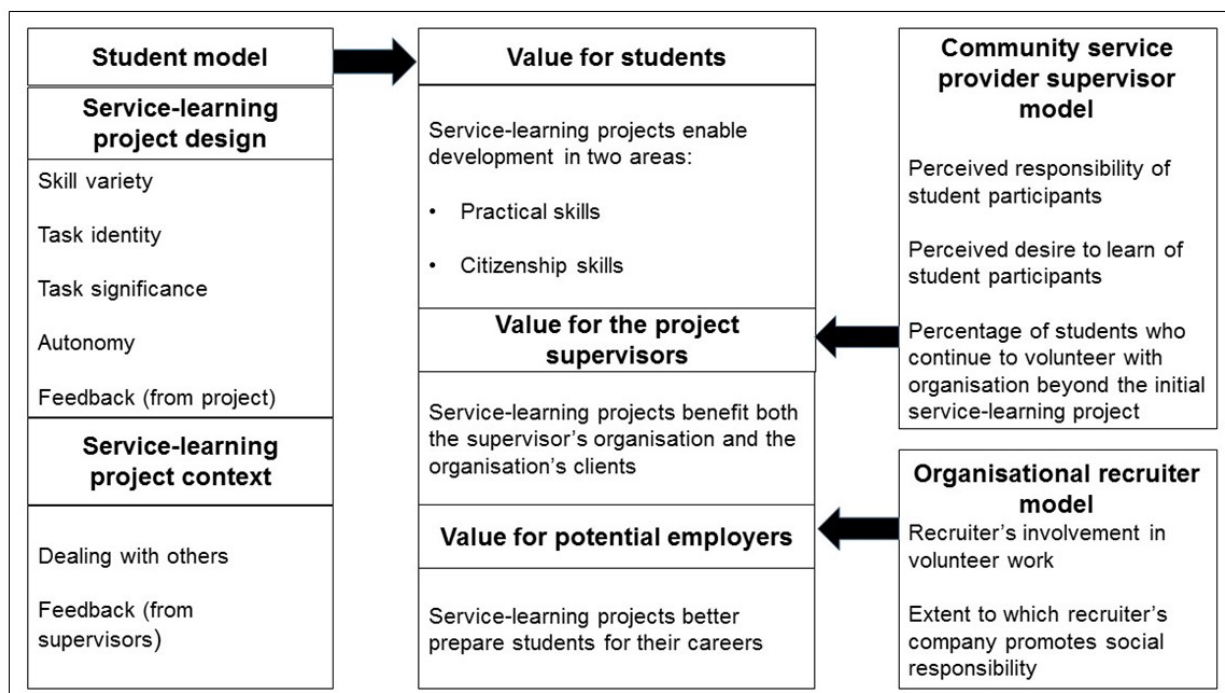
Rajan, 2016:83), accounting education (Hervani *et al.*, 2015:40; Rutti *et al.*, 2016:437), information technology (Gan Kok Siew *et al.*, 2014:116; Ohashi & Yamachi, 2017:56), engineering (Tucker *et al.*, 2014:62), operations management (Jordaan, 2014:61) and marketing (Braunsberger & Flamm, 2015:184; Crutchfield, 2017:8). In all these projects, the benefits of learning, community service and attitudinal change have been documented. Helms *et al.* (2015:370) mention a long-time commitment to community work as one of the significant side-benefits of service-learning.

Service-learning has even been successfully adapted to online learning environments (Helms *et al.*, 2015:377; Hervani *et al.*, 2015:40). In service learning projects for online courses, where not all the participants could meet face to face, all the project criteria of product completion, client satisfaction, student satisfaction, interaction and skill building, often associated with the traditional classroom, were satisfied (Helms *et al.*, 2015:376; Hervani *et al.*, 2015:40).

Lester *et al.* (2005:293) supply considerable empirical evidence that service-learning has a positive effect on the moral development of the students rendering the service, leadership development and sense of social responsibility. The model that they propose is given in Figure 3-3. Using structural equation modelling, they tested the value of the service learning project for students, project supervisors and potential employers (as dependent variables) when related to particular project design variables, the context of the projects, the role of the supervisor and the involvement of organisational recruiters (as independent variables).

Their results indicate a statistically significant benefit of service-learning in a variety of ways to a variety of stakeholders. Hahn and Hatcher (2014:66) also found statistical evidence that service learning experience leads to “deep learning”, the latter being defined as “learning for understanding” (Chotitham *et al.*, 2014:3315) or “learning for self-development” (Sadeghi, 2016:1044). McDonald (2013:292) has combined problem-based learning with service-learning and found significant synergies between the two methodologies, especially when students solve specific problems for community partners.

Figure 3-3: Multiple stakeholder model of the perceived value of service-learning



Source: Lester *et al.* (2005:290).

3.3.3.4 Elements of service-learning that could be used in engaged learning.

Since service-learning is about community engagement, the whole topic of service-learning is particularly relevant to engaged learning and could be implemented as one of the significant components of engaged learning. Implementing community projects in an MBA model is not an often-used approach, but would undoubtedly be value-adding.

The effects of service-learning on acquiring higher order generic skills, such as decision-making, problem-solving, teamwork, communication and self-management are well documented (Barth *et al.*, 2014:80; Hébert & Hauf, 2015:48; Jensen *et al.*, 2014:328). In the quest to equip students with more than just subject knowledge, service-learning could be a valuable instrument.

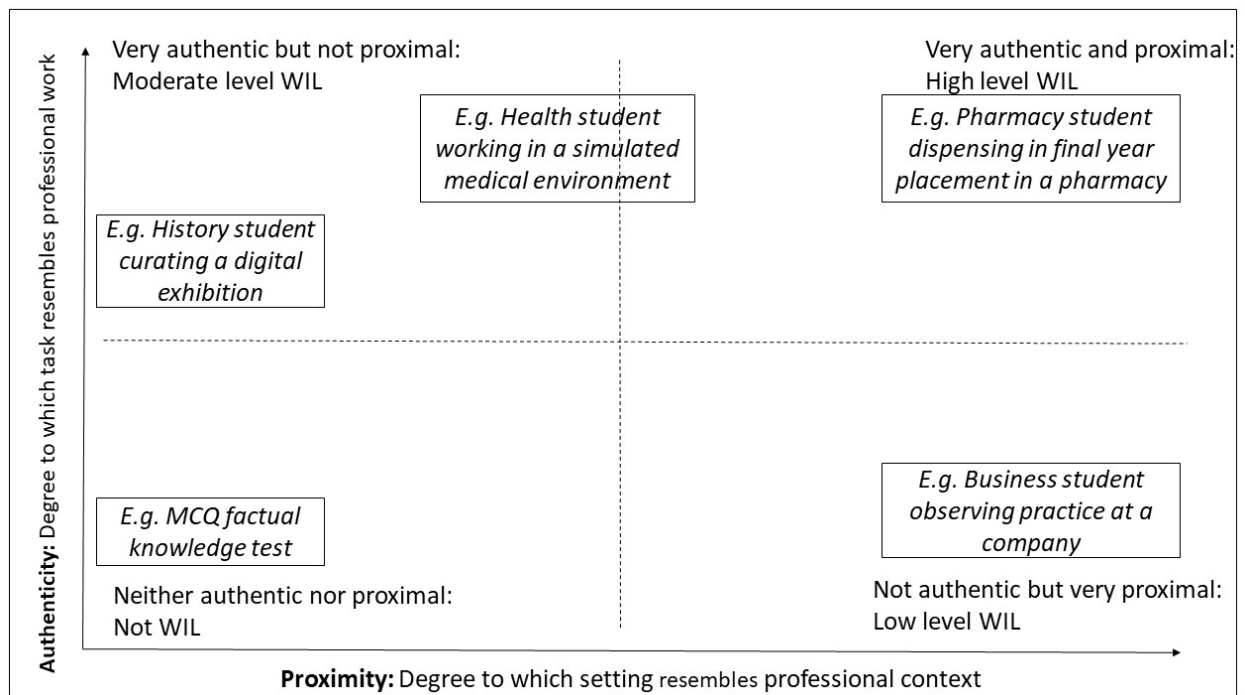
Specific elements that could be included in an engaged learning strategy are to select community organisations and to help them with management skills learned in MBA, with the potential additional benefit of developing teamwork skills, to accomplish attitudinal change amongst MBAs and to develop other higher-order thinking skills such as decision-making and problem-solving through community projects.

3.3.4 Work-integrated learning

While noting that work-integrated learning (WIL) is an ill-defined concept, Oliver (2015:61) attempts a definition for WIL that states that “Work-integrated learning occurs at various levels across a range of tasks that are authentic (the task resembles those required in professional life) or proximal (the setting resembles professional contexts)”. This definition describes the elements of WIL well. First, it could happen at various levels, in or around the real workplace or impact on different organisational levels in the workplace. Also, it includes tasks, implying that the student is actively involved. Third, the tasks are authentic, resembling those done in the real workplace.

Although the description is aimed at an undergraduate level, Figure 3-4 represents Oliver’s definition graphically.

Figure 3-4: Definition of work-integrated learning



Source: Oliver (2015:52)

The above figure shows two issues that are relevant for MBA classes. First, a simulation, such as a case study, that accurately assembles the workplace, is a form of WIL, and finally, the best learning laboratory is the actual workplace.

3.3.4.1 The philosophical foundation of work-integrated learning

Although WIL has its roots in ancient civilisations, such as the parables (case studies) used by Confucius and Jesus, described in paragraph 2.4.5, the teachings of Socrates and Aristotle, (par

2.4.3), and the apprenticeships of the Middle Ages (par 2.4.6), WIL, as we know it today, as a subset of experiential learning, is based on social constructivist philosophy (Dann & Richardson, 2015:156). Students construct the relevant knowledge in their heads as they engage with the learning material in the workplace (Jonsson *et al.*, 2014:3). The effects of the philosophies of Vygotsky (par 2.6.4) on social cognitivism and Dewey (par 2.6.2) on the societal impact of learning are clearly visible in WIL projects. With an increasing element of an online presence as a basis for WIL, the principles of connectivism (par 2.8) (Siemens, 2008:7).

3.3.4.2 History of work-integrated learning

Being a derivative of experiential learning (Elijido-Ten & Kloot, 2015:217), the original definition of work-integrated learning applied to any on- or off-campus vocational or professional learning or internships that prepared students for professional life (Schuster & Glavas, 2017:57). Evidence of internships from the fields of nursing, training of doctors, accounting, training of teachers and veterinarians are commonplace (Barends & Nel, 2017:11; Daniel & Daniel, 2015:208; Eklund Karlsson *et al.*, 2017:12; Howieson *et al.*, 2014:273; Leong & Kavanagh, 2013:12; Russell & Coventry, 2016:18; Thomson *et al.*, 2017:11). The term WIL gained popularity when universities started to focus on the development of generic skills, rather than focusing on mere academic knowledge. In the early 21st century, many universities embraced WIL as part of their strategic plans (Jackson & Wilton, 2016:284).

3.3.4.3 Evidence of the success of work-integrated learning

Although Leong and Kavanagh (2013:13) reported positive effects of WIL on the employability of students, but in another study amongst undergraduate students no direct increased employability was found, but higher-quality jobs and more relevant jobs were secured in both the short and the long term (Jackson & Collings, 2017:22). Jackson and Wilton (2016:284) also report improved a correlation between involvement in WIL and employability skills, leading to better career management abilities, although it might not immediately have translated to higher employability.

Benefits of work-integrated learning (WIL) that are reported are:

- It enables high-quality learning for students. Smith and Worsfold (2014:1083) report higher quality learning outcomes, also leading to higher levels of student satisfaction. Students also start appreciating the value of life-long learning (Rosier *et al.*, 2016:498).
- Several higher order generic skills and employability skills have been proven to develop through WIL, including critical thinking skills (Hays & Mehta, 2016:17; Walker *et al.*, 2014:111), decision-making skills (Rosier *et al.*, 2016:498), problem-solving skills (Burns & Chopra, 2017:8-10; Jackson, 2015:366), communication skills (Burns & Chopra,

2017:15; Jackson, 2015:366) and teamwork skills (Burns & Chopra, 2017:15; Jackson, 2015:366).

- Students become more adaptable, because they often have to learn to fit into the corporate environment during WIL projects (Rosier *et al.*, 2016:498).
- Self-efficacy and self-management skills of students develop positively (Bates *et al.*, 2014:24; Burns & Chopra, 2017:9; Thompson *et al.*, 2016:19).
- Where WIL includes professional placement or internships in professional organisations, MacDonald *et al.* (2014:163) found that professional skills and professional identity have developed positively.
- General benefits that students experience in the workplace, that, in the absence of WIL often only get realised during the first year of employment, are networking connections of students, practical experience of real-world scenarios, experiencing workplace culture, motivation to learn (and appreciating the value of coursework), initiative and a sense of social responsibility (Burns & Chopra, 2017:8). This benefit was observed in the STEM (science, technology, engineering and mathematics) disciplines.
- Atkinson *et al.* (2015:99) looked at the benefits accruing to employers who takes in students for WIL programmes, and reported some significant benefits, such as the opportunity to identify talent amongst students, access of resources for employers (if part-time students are regarded as a “free” human resource), and the ability to fulfil corporate citizenship obligations. They also found that cross-pollination between students and workers provided some professional development opportunities for staff and access to state-of-the-art techniques and technologies, as well as a renewed enthusiasm for learning.

There are some challenges to keep in mind when designing WIL programmes, including that many students feel that faculty did not prepare them adequately for the WIL experience. Attention to this could increase the benefit of WIL considerably (Burns & Chopra, 2017:11).

3.3.4.4 Elements of work-integrated learning that could be used in engaged learning.

Taking the students to their actual place of work as a form of work-integrated learning is an optimal method to achieve real deep learning, and are especially relevant to engaged learning. There is an additional benefit that most MBA students are already employed, which could provide the ideal “laboratory” for work-integrated learning projects. Preparing the student for the WIL experience is, therefore, essential. If the experience is designed so that students are encouraged to ask critical questions (for the sake of development of critical thinking, problem-solving or decision-making skills), it could be awkward for students in their own workplace, especially when the

culture is not conducive to criticism. Well-designed interventions by the course facilitator could address this potential problem.

Properly designed WIL programmes for MBA students could be instrumental in the development of specific generic skills, such as critical thinking, problem-solving or decision-making skills, time management and communication.

3.3.5 Problem-based learning

Problem-based learning utilises students' ability to think, collaborate and synthesise to find solutions to personal, interpersonal, professional and academic problems in the real world (McDonald, 2013:285), but are not to be confused with the learning of problem-solving techniques (Savery, 2015:14). The essence of successful problem-based learning is that real-life problems are posed to a team to solve, and the learning takes place while the team is looking for solutions (Savery, 2015:10). Critical elements for successful problem-based learning projects are that it needs to focus on real-world challenges, it needs to happen in a team, it needs to be based on past experience and understanding, and importantly, multiple perspectives must be accommodated and integrated into the solution (Norman & Schmidt, 2016:796). Problem-based learning is often associated with reflective practices, and reflection has been found to be an enabler of learning during problem-based learning interventions (Davidson & Major, 2014:27). Evaluation of the success of problem-based learning is, therefore, often through reflection or through the verbal or written presentation of solutions to peers and faculty.

Problem-based learning should not be confused with case-based learning or inquiry-based learning (Savery, 2015:12). The distinction is that problem-based learning revolves around real-life problems, whereas case-based learning and inquiry-based learning have a greater focus on solving theoretical problems in the classroom.

3.3.5.1 The philosophical foundation of problem-based learning

Like most constructivist methodologies, John Dewey is also the father of problem-based learning (Tarrant & Thiele, 2016:62). Problem-based learning is the epitome of constructivism, as students construct the learning material for themselves while researching and solving the problem (Innes *et al.*, 2016:46).

3.3.5.2 History of problem-based learning

Problem-based learning is a derivative from experiential learning (Yu *et al.*, 2014:334), but is a product of methodological evolution rather than having developed from a philosophical basis (McDonald, 2013:285).

Harvard Medical School introduced an instructional method closely resembling problem-based learning in 1870. However, for another hundred years, it received very little prominence. As a learning method, problem-based learning was first implemented in the medical field in the 1960s when McMaster University in Canada structured a multidisciplinary tutorial process as part of their training of medical professionals (Davidson & Major, 2014:24). During the 1980s and 1990s, it spread to other medical schools in North America and Europe (Savery, 2015:11).

In the 1990s, problem-based learning was adapted for teacher training, MBA programmes, engineering, architecture and economics (Servant & Schmidt, 2016:700).

3.3.5.3 Evidence of the success of problem-based learning

The benefits of problem-based learning have been thoroughly researched and documented (Efstratia, 2014:1259). An approach often advocated as optimal is to use problem-based learning together with other methods (McDonald, 2013:285; Poonpon, 2017:9).

The essence of problem-based learning is learning. Deep learning through involvement in multidisciplinary problem-solving has been noted as one of the significant benefits of problem-based learning (Fernandes, 2014:225; Jacob & Issac, 2014:553; Lemons, 2017:C7), especially evident amongst low-performing students (Han *et al.*, 2015:22). Malan *et al.* (2014:15) used problem-based learning, specifically to develop self-directed learning skills (Savery, 2015:10).

Other benefits of problem-based learning include development of social skills and teamwork (Notari *et al.*, 2014:146), development of process skills (Delaney *et al.*, 2017:221), reflective thinking abilities and self-discipline, as well as closing the gap between theory and reality (Savery, 2015:11). In addition, Fernandes (2014:225) reported that problem-based learning projects contributed to preparing graduates for professional practice.

In terms of the development of generic skills amongst graduates, various studies established a direct link between participation in problem-based learning projects and improved problem-solving skills (McDonald, 2013:285), critical thinking skills (Davidson & Major, 2014:24; McDonald, 2013:285; Savery, 2015:11), communication skills - both verbal and written (Davidson & Major, 2014:26; Lee *et al.*, 2014:20), teamwork skills (Davidson & Major, 2014:26; Tamim & Grant, 2013:84), the ability to apply subject knowledge to real-world scenarios (McDonald, 2013:285), multidisciplinary engagement (Savery, 2015:11), knowledge of innovation (Savery, 2015:11), creativity (Tamim & Grant, 2013:83), securing appropriate resources (Davidson & Major, 2014:26) and personal development in general (McDonald, 2013:285). Another benefit is that it enhances student engagement (Lee *et al.*, 2014:20).

Challenges with problem-based learning projects are experienced on two levels. On a cultural level, the most significant problems follow from the notion that embarking on problem-based learning is a culture shift for both faculty and students, and not managing this culture shift proactively results in either insufficient commitment of staff at all levels (McDonald, 2013:285; Wiek *et al.*, 2014:448) or inadequate lecturer orientation (Efstratia, 2014:1258; Savery, 2015:11). The results of this are often experienced on an organisational level. Difficulty to raise sufficient interest in the project (McDonald, 2013:285), the wrong selection of problems to be investigated (the ideal problem to use for a project is often ill-defined and needs a multidisciplinary solution to solve) (Savery, 2015:11), unrealistic scheduling (Lee *et al.*, 2014:20; McDonald, 2013:285) or insufficient planning, resource allocation or process management from project definition to final briefing (Savery, 2015:11; Tamim & Grant, 2013:76; Wiek *et al.*, 2014:448). Continued dialogue between all participating parties and stakeholders should, therefore, be managed proactively (Rob *et al.*, 2009:92).

Assessment of problem-based learning projects needs particular attention, since the assessment should not just take into account the success of the problem-solving that takes place, or the learning that took place, but rather a combination of these should be assessed. Use of rubrics (Lee *et al.*, 2014:26; Tamim & Grant, 2013:91) and different forms of sharing results with other groups (English & Kitsantas, 2013:141) and/or peer assessment are effective assessment methods, especially since problem-based learning is a team effort (English & Kitsantas, 2013:143; Jaime *et al.*, 2016:447; Savery, 2015:11). De los Ríos-Carmenado *et al.* (2015:14) describe a system of portfolio assessment where all the different elements mentioned (successful problem-solving, learning and teamwork) get assessed simultaneously.

3.3.5.4 Elements of problem-based learning that could be used in engaged learning.

The practice to get students divided into groups and giving them a problem to solve as assessment could be a valuable and engaging learning experience for MBA students. Critical is that the problem-solving project needs to be well-designed and well-managed. Design elements specific to problem-based learning that could be included are the possibility of multidisciplinary projects and to combine problem-based learning projects with either work-integrated learning or with service-learning projects. In terms of assessment of problem-based learning, the use of rubrics, portfolio assessment and peer assessment could well be used effectively in an MBA group.

3.3.6 Games and simulations

The essence of using games and simulations is to create a stimulating environment by using play to enhance the learning of the subject matter. This could involve any type of play, from simple games such as throwing balls to simulate a supply chain to highly technical computer games. In the 21st-century computer-based games gave rise to the topic of “serious games”, the name given to the use of videogames to achieve an educational purpose (Girard *et al.*, 2013:217).

Critically important for games to have an educational benefit is that the game, its benefits, the management of the game and the assessment of the learning points need to be correctly designed. Landers (2014:760) suggests that the instructional content and game characteristics should be aligned and that a vital element for the learning to take place is the debriefing of the game. Arnab *et al.* (2015:409) propose a mechanism of plotting the learning mechanics and game mechanics in parallel to each other to ensure that learning takes place during the game.

3.3.6.1 The philosophical foundation of games and simulations in teaching

The use of games and simulations as a teaching aid has a constructivist basis, but there is also an element of behaviourist philosophy influencing the outcome (especially if students are competing for a reward). Landers (2014:766) suggests that the behaviour during the actual game will essentially show whether the learning outcomes are achieved.

Shaffer (2006:233) refers to an “epistemic frame”, a term that describes the justification, the method, the explanation and the representation of a game that is used for instructional purposes. This frame is then used as a basis of designing valuable learning experiences through games.

In terms of the psychological process during gaming, learning is either moderated by strengthening the relationship between instructional design and outcomes, or learning is mediated by direct influence from the game (Landers, 2014:766).

3.3.6.2 History of games and simulations in teaching

The use of games and simulations to clarify educational concepts is not new. Business games have been around for decades: W Edwards Deming used the Red Bead Game to educate the Japanese after World War II on quality issues (Lohr, 2015:17). The beer game was designed at MIT in the early 1960s to demonstrate supply chain optimisation (Alfieri & Zotteri, 2017:402; Shen, 2017a:6).

Computer games changed the playing field of using games for educational purposes. The first time the term “serious games” was used, was in the 1970s by Clark Abt, in a book with the name

“Serious games”. The use of games to educate has grown since then, but with the advent of computer games, it snowballed (Ricciardi & Paolis, 2014:10). The term “serious games” has since been used for computer-generated games used for educational purposes.

There is another possible use of games for educational purposes. Kafai (2006:39) describes a project where students have to design a game rather than play a game to meet specific higher level learning goals.

3.3.6.3 Evidence of the success of games and simulations in teaching

The most obvious benefit of using games and simulations class for learning purposes is the enjoyment students get from taking part or observing games (Soflano *et al.*, 2015:210). Girard *et al.* (2013:216) found that, although not all games improved learning, taking part in computer-based games does have a positive effect on student engagement. They also found that many difficult-to-experience situations can be simulated in a game, which would enhance the learning process (Loh *et al.*, 2015:27).

Eseryel *et al.* (2014:51) list quantitative evidence that students benefit from using games for learning purposes. Because games often motivate people to compete, motivation determines their involvement in the game, and involvement in the game has a positive effect on problem-solving skills development. Improved problem-solving was also found to result from games in the hospitality industry (Wang & Wang, 2017:300).

Another benefit of using games for educational purposes is that students that are good at gaming are sometimes not good at other academic endeavours, and it could serve as motivation for them to excel academically (Shaffer, 2006:230). Usoro *et al.* (2016:704) extended this argument to the use of games for the support of people with learning disabilities.

One of the issues that need attention when games are used for learning purposes is that many games only have a one-player complement. The development of social skills, therefore, lags behind when gaming is used, especially computer games (Ricciardi & Paolis, 2014:10).

Assessment of learning and of skills gained during games is often tricky. Bellotti *et al.* (2013:7) suggest assessment on three levels: the actual score of the game, reflection by the participants, and evaluation by the lecturer. Care should be taken that unethical behaviour such as cheating, which is possible in games, is not rewarded. Reflection on the game is a critical element of assessing the learning that takes place.

3.3.6.4 Elements of games and simulations in teaching that could be used in engaged learning.

Because a typical MBA class consists of students entering the MBA programme with different levels of prior subject knowledge and experience, activities that can level the playing field could be advantageous. Games and simulations could serve this purpose. If the requirement is engaged learning, games and simulations indeed engage students in the classroom.

It is vital that games and simulations for MBA students are well designed, with learning outcomes in mind. Since MBA students are adults, the use of computer games might not be advisable.

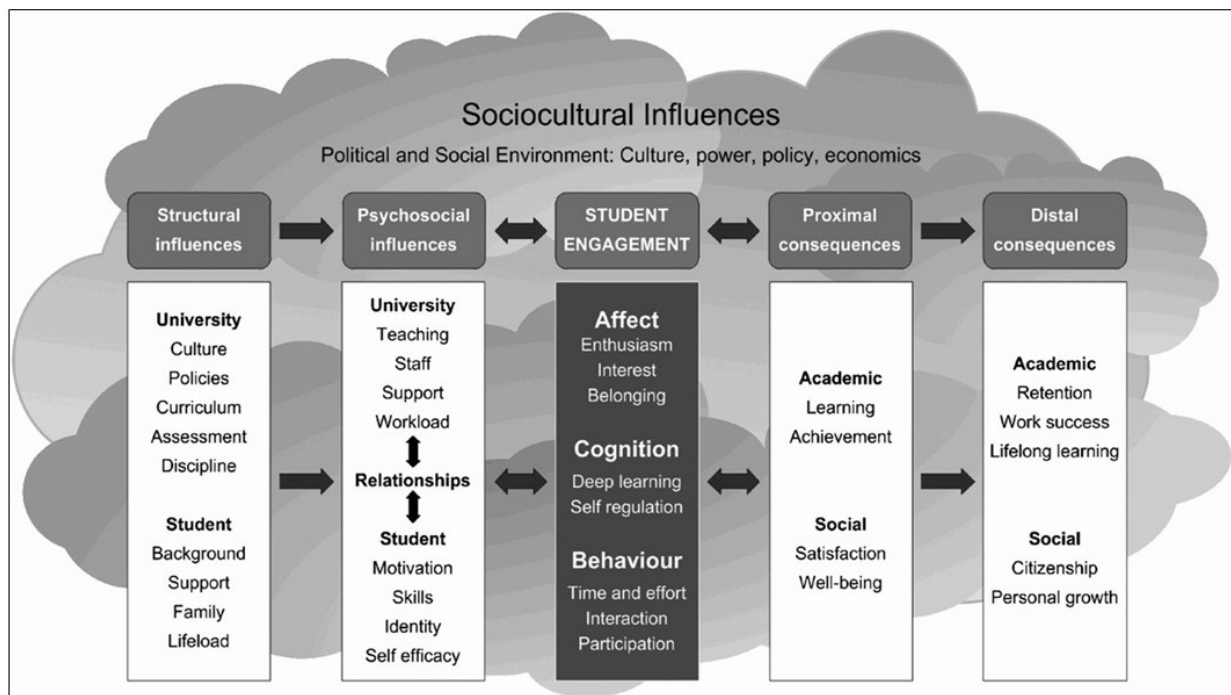
3.3.7 Student engagement in the classroom

“Engagement” is defined as “participation in educationally effective practices, both inside and outside the classroom that lead to a range of measurable outcomes” (Quaye & Harper, 2014:2). Kearsley and Schneiderman (1999:22) proposed an engagement theory where they postulate that engagement in learning activities needs to occur in a group context (i.e. collaborative teams), they are project-based, and they have an outside focus. The three components are summarised by the phrase “relate-create-donate”. Although this definition was coined in a specific technology-based context with a service-learning component, it includes two critically important elements of engagement, namely team based (“relate”) and project-based (“create”). The third element (“donate”) leans more towards service-learning than classroom engagement.

Kahu (2013:766) proposes a psychological model that frames the concept of engagement in terms of its precedents and antecedents shown in Figure 3-5. In the graphical presentation of the model below, the structural and psychological influences on engagement are outlined, as well as the proximal (short-term) and distal (long-term) consequences of engagement.

From this model, it can be seen that student engagement (in the middle of the model) consists of three psychological elements, namely affect, cognition and behaviour. These elements are directly influenced by university factors such as the method of teaching, staff, level of support and workload, as well as student factors such as motivation, skills, identity and self-efficacy, and the relationship between the university role players and the students. These influences are determined by the culture, policies, curriculum, assessment methods and discipline prescribed by the university, as well as by the background, support structure, family and personal circumstances (“lifeload”) of the student.

Figure 3-5: Socio-cultural influences on/of engagement



Source: Kahu (2013:766)

The model shows the short-term effects of engagement, being improved learning and achievement, as well as satisfaction and well-being. The long-term effects are retention of knowledge, work success, inclination towards lifelong learning, as well as corporate citizenship and personal growth (Kahu, 2013:766). This model also includes other engagement elements, such as community engagement (service-learning projects).

With ever-increasing class sizes, the traditional lecturer-student relationship gets more difficult to maintain. Various factors (environmental, attitudinal or activities) can lead to increased student engagement. The list of practices that can be regarded as activities that enhance student engagement is infinite, but a few of the most common practices include:

- quality partnerships between staff and students (Seale *et al.*, 2015:551);
- student participation in the classroom (Quaye & Harper, 2014:3; Seale *et al.*, 2015:551);
- the use of student engagement projects (Seale *et al.*, 2015:551);
- the flipped classroom, provided it is designed and managed to achieve student engagement (Gilboy *et al.*, 2015:113);
- real-time assessment (Gilboy *et al.*, 2015:113);
- use of games and simulations (Soflano *et al.*, 2015:210) and
- assignments and activities that engage students (Foster & Rahinel, 2008:5).

Other determinants of student engagement include the relevance of learning material, perceived control over learning activities, instructional format, group size, class venue size and layout, and the personality and competence level of the lecturer (Shernoff *et al.*, 2014:480).

A common thread that runs through the literature on student engagement in the classroom is that, although it is learner-centred, the lecturer plays a pivotal role in creating an engaging atmosphere (Kahu, 2013:766; Quaye & Harper, 2014:3; Seale *et al.*, 2015:5515).

There is very little information on the assessment of classroom engagement, other than it should form part of the greater assessment picture. Assessment strategies that have been mentioned are activity logs, reflection and other qualitative methods (Cox *et al.*, 2014:167).

3.3.7.1 The philosophical foundation of student engagement

Engagement consists of a number of components, notably affective-emotional, cognitive and behavioural engagement (Anderson *et al.*, 2017:223). To enable student engagement, all three of these components need to be addressed. In being genuinely engaged in the classroom, whether through group discussions, games or other activities, students make sense of the content. Engagement, therefore, has its one root in constructivism (Arghode *et al.*, 2017:607), and also a robust root in connectivism (Bassford *et al.*, 2017; Madhav & Joseph, 2017:3).

Zepke (2016:435) warns against an over-emphasis on student engagement, fearing that the issue of classroom engagement is asking the wrong question, in that it emphasises pedagogy at the expense of the curriculum. The philosophical question at hand is whether the goal of teaching is to learn about the curriculum, or whether other learning points and skills are more important than the curriculum. The increasing focus on employability skills, graduate attributes and generic skills that are changing the teaching focus worldwide, indicates that the curriculum in higher education might not necessarily be the overriding determinant of what needs to be taught, but should be the vehicle for students to develop other higher-order thinking skills. If this becomes the objective of the learning, engagement activities are applicable (Swingler *et al.*, 2017).

3.3.7.2 History of classroom engagement

In traditional teaching, the issue of classroom engagement was not necessary, since classes were so small that lecturers had a personal relationship with their students. In the 21st-century however, student-to-lecturer ratios grew disproportionately, partially because the audiovisual and communication technology made this a viable option for the first time, where lecturers could entertain larger groups in auditoria using big screens and communication could move from one-on-one towards electronic communication. The topic of classroom engagement and activities that

lead to classroom engagement, therefore really became relevant in the 21st-century. With the increased use of information technology, cellular phones, social networking, learning management systems, online learning and MOOCs, creating an engaged environment became increasingly relevant (Gebre *et al.*, 2014:95; Rashid & Asghar, 2016:611), especially in face-to-face programmes, since real engagement is probably one of the most challenging components of learning to emulate using distance learning methods.

3.3.7.3 Evidence of the success of student engagement

The benefits of a positive relationship between lecturer and student have been well documented (Furrer *et al.*, 2014:105; Reeve & Lee, 2014:529) and include relatedness, competence and autonomy. Other benefits of a productive relationship between lecturer and students include improved student engagement and higher student motivation (Furrer *et al.*, 2014:104). Classroom engagement by students, in turn, has been proven to have a positive causal effect on pass rates (Reeve & Lee, 2014:535). However, Choi and Rhee (2014:17) found that the only student engagement activity that had a positive effect on generic skill development (problem-solving, communication, interpersonal skills) was active learning.

Many of the benefits of improved student engagement are intuitively understood. An open relationship between lecturer and student enhances two-way communication, which enables lecturers to tune in to whether successful learning takes place. Student engagement in large classes is considerably more difficult than in small groups (Kahn, 2014:1017). Although engagement can be regarded as being the responsibility of the student, the types of tasks given by the lecturer and the social relationships in the class create a learning environment that is conducive to student engagement (Kahn, 2014:1017).

Fitzgerald *et al.* (2016:243) list a richer learning experience, improved research through greater relevance, student development and innovative practices as some of the benefits of engagement on all levels.

Technology has enabled many new platforms that can be used to elicit student engagement. Platforms such as learning management systems (par 3.4.1), Pinterest and even social network systems such as WhatsApp, Facebook, Padlet and Twitter are valuable tools to get feedback from students, especially in large classes (Allen *et al.*, 2016:47; Dyson *et al.*, 2015:312; Freitas *et al.*, 2015:470; Hussein *et al.*, 2017:128; Wang, 2017:90). Sun (2014:88) found that the use of clickers and other mobile polling technologies such as AnswerGarden and Kahoot reduce anxiety, improve learning and increase student attention during polling.

Student engagement as a vehicle to develop generic skills, such as problem-solving, decision-making, teamwork, communication, self-management and leadership depends on the level and type of engagement used, but the positive effect of getting students engaged in the classroom has been well established (Daniels & Brooker, 2014:75; James *et al.*, 2014:342; Oliver, 2013:462; Su, 2014:1219).

3.3.7.4 Elements of student engagement that could be used in engaged learning.

Since engaged learning is about engagement per se, most activities listed above could be applicable in the MBA classroom within the time constraints involved in an MBA programme. It is essential that the environment must be conducive to student engagement and that the key role player to establish the environment is still the lecturer. Specific techniques that could be used are student participation in the classroom, the use of student engagement projects, employing the flipped classroom, using rigorous templates, real-time assessment, the use of games and simulations, productive use of the learning management system and the use of MBA-specific activities and assignments such as group discussions, debates and site visits.

3.3.8 Flipped classroom

In traditional classrooms, the class was used to explain the learning material and then homework was given to be completed before the next lesson. The flipped classroom refers to a system where the theory is covered at home before the class, through the use of asynchronous videos, computer-assisted method and practice problems, followed by active, cooperative, problem-based learning activities in the classroom under the supervision of the lecturer (Moore, 2016:66).

3.3.8.1 The philosophical foundation of the flipped classroom

The philosophy of the flipped classroom is based on the marriage of two conflicting philosophies, namely the instructional lectures that are completed at home that are based on objectivist principles and the problem-based learning that takes place in the classroom that is based on constructivist theory (Bishop & Verleger, 2013:4). Therefore, the introduction of the flipped classroom was the logical development from student-centred learning theories by Vygotsky (zone of proximal development) and Piaget (cognitive conflict) that culminated in techniques such as experiential learning and problem-based learning (Rotellar & Cain, 2016:34).

3.3.8.2 History of the flipped classroom

The history of the flipped classroom is inextricably linked to technological development, where instructional videos and duplicated PowerPoint slides are available to each student. The availability of the Internet, mobile phone technology and open source software has enabled

students in developed economies to access the information readily and cheaply (Bishop & Verleger, 2013:6). In the 21st-century free video lectures, such as Kahn Academy and MIT's open courseware (OCW), online assessment and intelligent tutoring systems have proven to be extremely useful.

The benefits of problem-based learning, coupled with technological availability, paved the way for the flipped classroom (Bishop & Verleger, 2013:10).

3.3.8.3 Evidence of the success of the flipped classroom

Bishop and Verleger (2013:17) summarised 24 studies on the flipped classroom, carried out up to 2012, of which only one showed encouraging evidence of improved student performance. In this study amongst nursing students, Harrington *et al.* (2015:180) could not find quantitative proof that the flipped classroom delivered improved results either. Similarly, Zhao and Ho (2014:18) and (Morgan *et al.*:159) report that the flipped classroom did not deliver statistically better results in terms of learning than traditional teaching, although student satisfaction favoured the flipped model. However, other studies have shown that blended learning methods (of which the flipped classroom is one) have improved student performance in higher education (McLaughlin *et al.*, 2014:242; Schultz *et al.*, 2014:1338; Thai *et al.*, 2017:125; Tune *et al.*, 2013:319), provided that the learning experience is well-designed (Maxson & Szaniszlo, 2015:766).

The most generally reported benefits of the flipped classroom pertain to time management, especially amongst groups, such as MBA students, where time is a severe constraint (Lai & Hwang, 2016:138). Herreid and Schiller (2013:65) and Tan *et al.* (2015:458) found that the flipped classroom is also extremely beneficial to manage the time taken for preparing case studies. Another benefit is that a well-designed flipped classroom allows more time in class for student engagement activities (Bergmann & Sams, 2014:147; Gilboy *et al.*, 2015:113).

Introducing a flipped classroom approach for the first time requires major redesign and creative thinking from the lecturer (Chen *et al.*, 2014:26; Jing *et al.*, 2016:3; Prashar, 2015:136; Yeung, 2014:62). Pitfalls of a flipped classroom include student resistance at first, the design of homework to have a beneficial effect (Herreid & Schiller, 2013:63), and a penalty system for not going through the preparation work before the lesson (Moffett, 2015:335).

3.3.8.4 Elements of the flipped classroom that could be used in engaged learning.

Although the effect of a flipped classroom is not unanimously positive, the advantage that flipping opens up for project-based learning, service-learning, experiential learning, work-integrated learning and classroom engagement makes it an attractive choice to consider for engaged

learning. The most important learning points include a well-planned event, a focus on the student, and the optimal use of time (Moffett, 2015:335).

3.3.9 Reflective practice

Although reflective practice per se is not a learning methodology, comparable to experiential learning and service-learning, the practice of reflection is mentioned as part of so many methods that it warrants the same attention as the other methodologies. Reflection is defined as the deliberate, purposeful, metacognitive thinking and action in which people engage in order to improve their professional practice (Sellars, 2017:2). Reflection in higher education takes place on two levels, namely students reflecting on their performance and on the learning material as a way to embed learning and, as described in the above definition, where lecturers reflect on their methodology, its effectiveness and on educational processes in general (Vinjamuri *et al.*, 2017:944).

Reflective practice, from a psychological perspective, needs to include reflection, disciplinarity and modality (Barton & Ryan, 2014:423). In essence, it implies that the process of reflection needs to be a conscious, structured and disciplined process, explicitly focused on the contents at hand. Sellars (2017:6) distinguish between different types of reflection for lecturers, such as academic reflection (on the learning content), social efficacy reflection (on teaching strategies), developmental reflection (on the developmental level of the students) and critical social reconstructionist reflection (on what we are trying to achieve). Kolb (2014:137) regards the essence of reflection as asking three questions: “What? So what? Now what?”

3.3.9.1 The philosophical foundation of reflective practice

Critical reflection has its origins in the Socratic philosophy of logic in ancient Greece (such as in his paradox of inquiry). In modern times, reflection as a learning strategy is based on the cognitivist notion that learning takes place when the reality is questioned. It has been widely used in philosophy, psychology and education, the latter since the late 1800s (Swanwick *et al.*, 2014:168).

3.3.9.2 History of reflection in classrooms

Reflection is not a new phenomenon. From ancient times politicians, philosophers, military strategists, teachers and physicians reflected on the successes of their endeavours before embarking on the next. Reflection as a way to enhance learning has been documented in schools and universities since the 1800s, and in other sciences since the 1900s (Ryan & Ryan, 2013:256). John Dewey, in his 1933 book “How do we think?” discussed reflection as a cognitive part of the

learning process. Reflection, as a formal educational practice, has only gained popularity in the early 21st century as the focus of the educational shift from teacher-centred to learner-centred learning environments. Most learning methods described in this chapter rely heavily on reflective practice as part of the learning process that takes place.

3.3.9.3 Evidence of the success of reflective practice

Reflection of lecturers on their teaching performance and on the techniques used for instruction has been statistically shown to significantly improved the performance of lecturers (La Prade *et al.*, 2014:633).

Benefits of reflection include

- It develops a professional disciplinary practice (Swanwick *et al.*, 2014:167). If students are required to reflect on their learning, it becomes a way of life for them, which will be emulated when they enter professional life.
- Since reflection is, in essence, a process of thinking, it helps develop critical thinking skills (Swanwick *et al.*, 2014:167), the latter being one of the generic skills most sought in the workplace.
- Reflection could play a vital part in the learning process to ensure a deeper understanding of the subject content (Harrington & Luo, 2016:7; Richard *et al.*, 2017:73).

In educational practice, various forms of reflection are used. Some of these include:

- Reflective journals as commonly used tools for formal eliciting and capturing of reflection. Such journals have been used in many different disciplines (Bruno & Dell'Aversana, 2017:259; Casey, 2013:317; Ruiz-López *et al.*, 2015:e30; Tsingos *et al.*, 2014:7; Zori, 2016:328);
- reflection sheets (templates) given to students, asking specific questions to guide the reflection process (Deslandes *et al.*, 2018:3; Lim & Hew, 2014:44);
- open-ended questionnaires, as a structured way to ensure that reflection takes place and also providing some information that could later be valuable for research (Chan *et al.*, 2013:1);
- interviews with individuals or focus groups as a form of reflection, especially if the nature of the interview is such that reflective questions are being asked to the interviewee or panel (Görlitz *et al.*, 2015:536; Maurer *et al.*, 2017:340); and
- technology-enabled reflection, which is a result of the fast-developing information technology at the disposal of students, enabling reflection to be prompted and managed

through electronic means, such as blogging, using WhatsApp groups, the learning management system (LMS) or voice notes (Isaacs *et al.*, 2013:1079; Laghari *et al.*, 2017:130).

3.3.9.4 Elements of reflective practice that could be used in engaged learning.

Reflection (formal and informal) could be valuable learning mechanisms, but it should be used in conjunction with other learning methods. Such reflection could include any of the methods used, but it should be formalised.

3.4 21st Century learning technology

Technology is changing the classroom of the 21st century. Several technology-related issues affect the nature of learning in the 21st century. These are listed separately but discussed together, as many of the learning principles relating to technology are common to the different technologies.

E-learning is an increasingly popular concept describing all computer-assisted learning. Arkorful and Abaidoo (2015:41) place e-learning technologies on a continuum, based on its reliance on information technology. This continuum ranges from computer-assisted learning, computer-based learning, Internet-based learning and synchronous online learning and asynchronous to online learning. Advantages of e-learning are flexibility in terms of time and place, ease of access to a vast amount of information, opportunities for relations with other students through discussion forums, cost-effectiveness, considering individual students' differences and compensating for scarce academic staff. Disadvantages include a sense of isolation of students, less effective clarifications and explanation than traditional learning, reduced communication and socialisation skills, difficult-to-control examinations and proneness to communication website congestion (Arkorful & Abaidoo, 2015:34).

Technology-enabled learning (TEL) is an umbrella term that refers to the use of some form of digital technology with the intention that learning should take place in the process. (Kirkwood & Price, 2016:2). Other technological platforms that affect learning are Learning Management Systems (LMS) and the Internet. The offerings by universities are changing rapidly, as more online offerings and Massive Online Open Courses (MOOCs) make their appearance (Arbaugh, 2002:221). The term "blended learning" (Fan, 2017:585) is often used for concurrent use of technology and face-to-face methods to ensure learning.

The essence of using technology in the classroom is that learning should always be the primary goal, and the use of technology should be an enabler of learning (Sandars *et al.*, 2015:1040).

Although digital technology is often used for administrative purposes (with good reason and to good effect), the goal should always be improved learning.

3.4.1 Learning management systems (LMS)

An LMS is a software application for the administration, documentation, tracking, reporting and delivery of educational courses or training programmes (Schoonenboom, 2014:248). They help the instructor deliver material to the students, administer tests and other assignments, track student progress, and manage record-keeping. The biggest pitfall of an LMS is that it is designed for the benefit of the lecturer, and is therefore not learner-centred (Conde *et al.*, 2014:200).

LMSs are available in various formats, from those that use cloud computing or open-source (free) software to those that are based on an institution's computer network: Examples of cloud-based LMSs are Adobe Captivate Prime, Docebo LMS, Talent LMS, The Academy LMS and ExpertusONE. These cloud-based LMSs enable interaction on personal computers or mobile phones. Most of them have the basic features of being able to share resources, a message function, a grade book, electronic study guides, posting and receiving assignments and a drop box, as well as some unique features that distinguish them from other systems. Open-source LMSs are very popular among South African higher education institutions such as UNISA, the University of Cape Town, North-West University and the University of the Free State, among others. The reason for this is that open-source LMSs do not require licence fees, and all the users can contribute to the functionalities of the LMS. The most commonly used LMSs in South Africa include Moodle, SAKAI and to a lesser extent Eliademy, Forma.LMS and others. Licenced LMSs, such as Blackboard, are less prevalent in developing countries such as South Africa, due to the licence fees involved.

Benefits of an LMS include that it enables lecturers to focus on learning-related matters, proper tracking of student activities and that all students can receive the same information and resources through the LMS at the same time (Wei *et al.*, 2015:20). A good LMS also enables well-designed online programmes to offer some of the benefits of face-to-face programmes, which could avail education for people previously excluded. An LMS also enables that tests or quizzes (Little, 2015:384) could be completed in the LMS, which could automate some assessment and save the lecturer valuable marking time.

The most prominent benefit of using an LMS is that information can be added and distributed in real-time, which could speed up feedback on tests and enable inclusion of relevant material from events in the world. Student feedback about the ease of use of an LMS indicates acceptance of

LMS technology (Bott *et al.*, 2014:191; Dahlstrom *et al.*, 2014). Challenges experienced are often related to accessibility, data cost, technological support and technological failure.

3.4.2 Blended learning

Blended learning combines the strength of face-to-face and online learning for maximum student benefit (Porter *et al.*, 2014:194). When appropriately designed, blended learning provides the benefit of all the methods that are included in the blended design (Graham *et al.*, 2013:13). Employing blended learning is a mind shift for an institution and for an individual lecturer, and while implementing, resistance to change is regularly experienced (Moskal *et al.*, 2013:22), often from both faculty and students.

There are many different models of blended learning (Kaur, 2013:613), including synchronous vs asynchronous, online vs offline, self-paced vs live blending, and structured vs unstructured blending. All of these could be equally effective, depending on the groups and the circumstances.

Earlier studies on the benefits of blended learning revealed improved student satisfaction, but no significance improvement in either learning or critical thinking skills (Güzer & Caner, 2014:602; Kazu & Demirkol, 2014:85; Smith, 2013:82), although subsequent studies have shown significant improvements in both learning effectiveness and critical thinking skills (BakarNordin & Alias, 2013:584) as well as in creativity (Bazhenov & Luchaninov, 2014:373). Other advantages listed by Kaur (2013:615) include that it enforces a switch from passive to active learning, that it combines the benefit of online or face-to-face teaching, which could better serve varying learning styles, that it adds a human touch to the teaching, enhances individualisation and relevance and increases flexibility. Challenges (Kaur, 2013:613) include getting the technology to work, failure of management to make the culture shift to blended learning, redefining the role of the facilitator and monitoring progress, as well as ensuring that the blended learning is part of the instructional design, not just an add-on, as well as general coordination and management of the blended classroom.

3.4.3 Online teaching, including Massive Online Open Courses (MOOCs)

There is a noticeable shift towards online offerings of tertiary (and other) education, simply because the technology makes education accessible (Lowenthal *et al.*, 2014:2). This shift represents a potential threat to traditional face-to-face universities if they cannot provide a superior offering to online competitors. Online education offers the opportunity of significant cost savings, with the potential of driving down costs for face-to-face courses too (Deming *et al.*, 2015:500).

Benefits of online classes include that it promotes (and requires) self-regulated learning, which has a positive effect on time-management, metacognition and critical thinking, which in turn has a positive effect on academic outcomes (Broadbent & Poon, 2015:12). Students in online courses have been reported to use social networking productively (Hamid *et al.*, 2015:8; O' Shea *et al.*, 2015:57)

Quality in online classes have been reported to be potentially problematic, but that is an effect of the number of students, rather than of the mode of delivery (Margaryan *et al.*, 2015:77). Traditional forms of engagement do not take place, but alternative forms are already being developed by faculty and students (O' Shea *et al.*, 2015:53).

Massive Online Open Courses (MOOCs) represent a model where instruction is online and free, but students have to pay to write examinations and get certified. Most of the highly-rated universities are starting to experiment with MOOCs, but the quality of tuition at MOOCs is inferior to face-to-face universities (Margaryan *et al.*, 2015:82). MOOCs have the potential to redefine the playing field of higher education. (Freitas *et al.*, 2015:469; Mazoue, 2014:7).

Note that online courses and MOOCs are outside the scope of this study, and will not be discussed further.

3.5 Modern assessment strategies

Assessment of learning is a critical part of the learning experience. The distinction between formative and summative assessment has been discussed at length in literature and is therefore not part of this study. Rafferty (2013:49) found that MBA students hardly distinguish between formative and summative assessment. However, any assessment should be a meaningful learning experience (Carless, 2017a:16). Trevelyan and Wilson (2012:496) label it as “assessment for learning” as opposed to “assessment of learning”.

Assessment should establish whether deep learning has taken place and whether subject-related skills (and any other generic skills) have developed (Idris *et al.*, 2012:402; Whiley *et al.*, 2017:180; Wilson & Pretorius, 2017:256). Continuous assessment is the best primary predictor of students' final examination performance (Shorter & Young, 2011:1066), which raises the question of whether continuous assessment could not replace examinations. Some researchers go as far as advocating the elimination of grades, being replaced by feedback (Dobrow *et al.*, 2011:275).

A few forms of assessment are listed below, and those perceived to contribute to engaged learning are discussed in more detail.

3.5.1 Examinations

Examinations are associated with traditional teaching methods (Rideout, 2017:10; Uddin *et al.*, 2016:93). A great deal has been written about the advantages and disadvantages of examinations as an assessment method. The disadvantages include student stress affecting performance, the difference between students' knowledge and language proficiency and examinations not being a true test of ability (Bagban *et al.*, 2017:331; Weideman *et al.*, 2017:8). The advantage most often mentioned is the fact that an examination is one way to test an individual's knowledge and understanding without the possibility of being assisted by others during the time that the knowledge is tested.

3.5.2 Assignments

The 'traditional' assessment method of assignments does have significant benefits, but there are certain prerequisites to ensure that learning takes place while doing an assignment and that assignments accurately assess a student's performance. In a blended learning environment, the use of assignments, including case-studies, was generally found to be positively experienced by MBA students (Bentley *et al.*, 2012:85). Case studies form a popular form of assignment (Evans, 2016:165), and can be presented in written or multimedia formats. Carless (2017b:124) found that live case studies, where students share real-life experience and peers are allowed to discuss them, are also more valuable than textbook case studies because students can experience that the academic content actually applies in their personal and work lives. A live case study's assessment generally includes individual portfolio development, as well as reviews by and input from external advisory boards, clients and external faculty.

3.5.3 Peer assessment

One solution to assessment overload for lecturers due to mounting student numbers is to use well-designed peer assessment opportunities. This type of assessment is often used during group work, where the assessment is either intra- or inter-group. There are various benefits to peer assessment, the largest being the learning and reflection that takes place while assessing somebody else's work (Rafferty, 2013:49). The learning achieved during peer assessment is not confined to subject knowledge, but includes the development of assessor skills, reflection skills and generic skills (Yuan & Kim, 2018:26), although consistency could be compromised (Ashenafi, 2017:249; Murray *et al.*, 2017:31). Peer assessment should, therefore, not be a once-off event and should be repeated with proper guidance (Ashenafi, 2017:240). When using peer assessment, Russell *et al.* (2017:188) suggest that including some questions on the peer assessor's role would also be a valuable learning experience for students, which makes the

assessment process a useful learning experience for the assessor. An interesting finding by Russell *et al.* (2017:189) is that the more relationship conflict there is in a group, the more accurate peer assessment becomes. The concept of peer assessment could be taken further into self-assessment, possibly combined with peer assessment, where students assess their own learning as well as the team's (Huth *et al.*, 2017:44). It is essential that a good template/rubric should be supplied, because it facilitates reflection, and it could be used to test other skills learnt (Dawson, 2017:357).

3.5.4 Portfolio assessment

Portfolio assessments, as an alternative to tests or examinations, are increasingly popular. Portfolio assessment refers to a practice where a portfolio of evidence replaces an examination. Portfolios could be hard copies or e-portfolios and are typically graded using a rubric. Careful consideration needs to be given to the design of the portfolio and communication of the criteria for the portfolio (Cain *et al.*, 2017:14).

Chapman (2017:117), Moen and Brown (2017:863) and Moen and Prescott (2016:374) discuss a specific case of portfolio assessment, named 'patchwork texts', where small complete pieces of information (referred to as "patches") are combined to make one comprehensive workpiece. Feedback is then provided after the completion of each patch, which then interlocks into a comprehensive workpiece. They even propose that some patches can be resubmitted, strengthening the learning process. Although work done through the semester adds up to a combined portfolio, there is still a distinction between the formative element (individual patches) and the summative portion (the final comprehensive workpiece).

The positive effect of portfolios on learning (Babaei *et al.*, 2014:7), pass rate (Cain *et al.*, 2017:15) and student satisfaction (Carless, 2017b:125) have been well researched. Other benefits include deep learning, creativity, discipline, flexibility and productive feedback processes (Carless, 2017b:125).

Portfolios are also useful methods for the assessment of other attributes, such as participation, personal development and insight (McLaughlin & Yan, 2017:573). Lai *et al.* (2017:316), and Jorre de St Jorre and Oliver (2017:570) mention another benefit of portfolio assessment, namely assessing the development of graduate attributes and other generic skills in addition to subject knowledge. Also, compiling a portfolio of evidence also stimulates reflection, while engaged with the portfolio (Lam, 2017:95). Psychological benefits are that portfolios reduce the stress that students experience under time pressure in examinations (Pereira *et al.*, 2017:172).

The results of studies on the benefits of group portfolios are less appealing, since students are not convinced that assessment through group portfolios are as effective as the assessment of individual portfolios. Although group portfolios promote teamwork (Carless, 2017b:125; Pereira *et al.*, 2017:170), it creates opportunities for less active students to gain from the work of the more active students.

Portfolio assessment does lead to better engagement and acts as a learning experience (Cain *et al.*, 2017:15; Jorre de St Jorre & Oliver, 2017:12; Pegrum & Oakley, 2017:33), development of generic skills (McLaughlin & Yan, 2017:573) and deep learning (Cain *et al.*, 2017:15; Lai *et al.*, 2017:361; Pegrum & Oakley, 2017:33). Although it should not be the only assessment method, portfolio assessment, especially individual portfolios, could contribute to an engaged learning strategy. The patchwork text concept is also valuable when combining continuous assessment with portfolio assessment.

3.5.5 Real-time feedback

A critical element necessary for formative and summative, assessment, is feedback to students (Smith & Williams, 2017:133). In the 21st century, students demand better quality education, at a lower price and instantly available. Calls for feedback with more regular intervals than at the end of the semester are increasingly surfacing (Wickramasinghe & Timpson, 2006:132). In the area of assessment, technology has enabled students to receive improved feedback much more quickly (Lee & Recker, 2017:10). Rapid feedback is no more a luxury, but has become a prerequisite for student engagement (Tang, 2017:64).

The list of technologies aimed at real-time feedback is endless. In paragraph 3.4, a number of them were listed as optimal use of the LMS, WhatsApp, blogging, clickers and other mobile-based technologies. A few of these will be discussed in detail as examples of technology that could be used to provide real-time feedback to the lecturer.

3.5.5.1 Learning Management Systems

The focus of this discussion is to look at the ability of an LMS to elicit real-time feedback to and from students (Lim, 2017:411) as part of a strategy that promotes engagement (Doolan & Gilbert, 2017:101; Madhav & Joseph, 2017:3). In a very recent study by Henderson *et al.* (2017:1571), students regarded “keeping in the loop”, mobility and quicker, more immediate outcomes as the top three reasons for using LMSs and other digital technology. The most prominent benefit of the use of an LMS in serious games (as described in paragraph 3.3.6) is reported as immediate feedback (de Freitas *et al.*, 2017:433). Apart from real-time feedback, the other benefit of using an LMS for feedback is that feedback is stored for future reference (Zou & Lambert, 2017:1089).

3.5.5.2 Classroom feedback systems

- Audience response systems (clickers): A clicker is a simple wireless device, the size of a credit card and looking like a television remote control, linked to the lecturer's computer, on which a student can answer multiple-choice questions in real time, with a summary of the answers appearing on the computer of the lecturer (Han & Finkelstein, 2013:70). The benefit of using audience response systems is that lecturers can adapt their teaching immediately, based on the feedback of students (Hung, 2017:994). The use of clickers is a preferred method for student engagement, especially in large groups (Dong *et al.*, 2017:170).
- Mobile phone-based systems: Technology is increasingly moving towards mobile devices replacing other handheld devices. The same applies to clickers, where mobile applications, often linked to the LMS are replacing clickers (Katz *et al.*, 2017:34). The benefits are similar to those of clickers, with the added benefit of not having to purchase the clickers. The effect on student satisfaction is generally positive, since most students are avid cell phone users (Hung, 2017:994).

3.5.5.3 Audio and video feedback

Audio and video recordings allow for fast, accurate and time-effective feedback, and various software systems have been employed to avail this to faculty. Audio or video recordings are time-effective ways to give feedback to larger groups (Dawson & Henderson, 2017:220). Video feedback is less common, as it uses more data, which has a cost implication for students, but the use of video feedback in fields such as medicine and performing arts is widely used to good effect (Boucher *et al.*, 2017:217; Flood *et al.*, 2017:102; Khan *et al.*, 2017:AB186).

Audio feedback through online, cloud-based or open-source software such as Audacity, CoolEdit Pro, Adobe Audition and WavePad allows lecturers to record feedback as an audio file and send it back to students, either by e-mail or through the LMS. It could take the form of a single podcast (aimed at all students) or individualised feedback. A patented innovation by the North-West University in South Africa, called Backchat®, integrates with the LMS and allows for the pre-recording of voice snippets and then merging these snippets with individualised voice comments into one single audio file. Student response to the individualised feedback (Roberts, 2017:46) suggests that timeliness of audio feedback entices more students to actually digest the feedback, rather than going directly to the mark given, and that they appreciate the personal touch and the clarity of voice feedback.

In general, audio and video feedback is received favourably by students (Han & Yang, 2017:344) and improves the effectiveness of learning (Stephens, 2017:19; Van der Kleij *et al.*, 2017:1103).

It also builds lecturer-student relationships and as such, improves engagement between lecturer and student (Davies *et al.*, 2017:50; Deeley, 2017:9).

3.5.5.4 Speech recognition technology

Technological advances have allowed for systems where voice can be turned into text with reasonable accuracy and transferred directly to a word processing programme such as MSWord or a browser. Microsoft has built the functionality into their latest versions of MSWord. Other dedicated systems such as Nuance's Dragon Naturally Speaking are advanced in recognising accents, correcting spelling errors and transcribing narrated text. This is not widely used outside language education (Grawemeyer *et al.*, 2017:155), probably due to the availability and ease of audio feedback and the inaccuracy of voice-to-text feedback relative to audio feedback (Donnelly *et al.*, 2017:226).

3.5.5.5 Elements of real-time feedback that could be used in engaged learning.

The closer feedback can get to real-time, the more significant the positive effect of the feedback on learning, engagement, motivation and relationships building. A system that allows for real-time feedback would be beneficial for engaged learning. Specific elements that could be used are audio feedback, embedded into the LMS.

3.6 Summary of elements that could be used in engaged learning

Table 3-1 summarises the elements discussed in this chapter, which could be employed in an engaged learning strategy. For the methodologies to be included in the table below, they require the following:

- The methodology must be research-based.
- The methodology must be proven in at least one context (either undergraduate or post-graduate).
- Advantages of the methodology must be proven to exceed disadvantages. Elements where this principle is not met, are shown in the row "elements that are not applicable",

Table 3-1 Learning methods that could be employed in an engaged learning strategy

	Traditional	Experiential & Action learning	Service-learning	WIL	Problem-based	Games & Simulations	Class-room engagement	Flipped class-room	Reflective practice	Technology
Applicability?	Low	High	Very high	Very high	Very high	High	Very high	High	Very high	High
Result in engagement?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	When used correctly
Really applicable elements	n/a	Learn at place of work or another setting. Group-work	Group-work. Application in community engagement	Application in own work environment. Individual application	Group-work. Increases engagement. Focus on problems.	Increases engagement. Use student competitiveness.	Group work. Projects Participation exercises. Flipped class. Games. Real-time assessment. Ensure relevance of material. Ensure engaging tasks.	Self-directed learning through flipping. Manage time and pace through flipping.	Structured reflection. Reflective journal.	Use of LMS. Use of Internet. Multimedia. Blended learning. Voice feedback.
Marginally applicable elements	Certain difficult concepts explained.	Experience through case studies.	Could even work for online courses (geographical spread) students).	Simulated work environment. Case studies WIL through observation.	Multi-disciplinary projects.	n/a	Ensure class size is manageable. Technological feedback platforms (big groups). Use of WhatsApp.	n/a	Lecturer reflection. Focus groups. Technology-enabled reflection.	Online courses.
Non-applicable elements	Full reliance on lecturing.	Action learning in workplace teams.	Major international projects (students are from a developing country).	n/a	n/a	Individual games reduces communication.	n/a	n/a	n/a	MOOCs

	Traditional	Experiential & Action learning	Service-learning	WIL	Problem-based	Games & Simulations	Class-room engagement	Flipped class-room	Reflective practice	Technology
Forms of assessment	Examination Tests.	Peer assessment. Group assessment. Portfolios.	Portfolios. Reflection. Peer assessment. Employer feedback. Supervisor feedback.	Portfolios. Reflection. Peer assessment. Employer feedback. Supervisor feedback.	Solving the problem. Reflection. Presentation to faculty. Presentation to peers. Rubrics. Portfolio. Assessment. Peer grading.	Reflection. Evaluate ethics. Game results. Lecturer evaluation. Peer evaluation. Evaluate contribution.	Real-time assessment. Assess contributions. Peer assessment. Group assessment.	Electronic assignment Real-time assessment	Lecturer assessment of reflective logs. Peer assessment. Grade reflection sheets	Electronic assessment. LMS for tests and quizzes. Rubrics.
Subject learning-related benefits	Subject knowledge.	Deep learning. Practical application.	Deep learning. Practical application. Student satisfaction.	High quality learning. Student satisfaction. Value of life-long learning Motivation to learn. Practical experience.	Deep learning Self-directed learning. Closing theory/reality gap. Knowledge of innovation.	Simplify concepts. Practical application.	Deep learning. Self-regulated learning. Inclination to life-long learning. Improved pass rates. Active learning.	Self-directed learning.	Deep learning. Understanding.	Help to structure learning

	Traditional	Experiential & Action learning	Service-learning	WIL	Problem-based	Games & Simulations	Class-room engagement	Flipped class-room	Reflective practice	Technology
Generic skills developed		Problem-solving. Teamwork. Results-driven. Flexibility.	Management skills. Citizenship. Community orientation. Leadership. Communication. Teamwork. Self-management. Decision-making. Attitude change.	Career management. Critical thinking. Decision-making. Problem-solving. Communication. Teamwork. Adaptability. Self-efficacy. Self-management. Time management. Professional skills. Sense of social responsibility.	Social skills Teamwork Process skills Reflective thinking Self-discipline Prepare for professional practice Problem-solving Critical thinking Communication (verbal and non-verbal) Creativity Securing resources Personal development	Teamwork. Communication. Problem-solving. Citizenship. Personal growth.	Internal motivation. Problem-solving. Communication. Interpersonal skills. Decision-making. Teamwork. Self-management.	Time management. Self-management.	Disciplinary – reflection. Critical thinking.	Technological competence.
Benefits for institution	Financial: Could accommodate larger groups. Lecturer-student ratio		Select good community partners. Benefit communities. CSR for university. PR for university.	Application of learning. Induction for students.			Relationships with students. Real-time assessment of learning.	Time management for faculty.	Improve teaching process.	Optimal use of resources.

	Traditional	Experiential & Action learning	Service-learning	WIL	Problem-based	Games & Simulations	Class-room engagement	Flipped class-room	Reflective practice	Technology
Direct benefits for employers			Prepare for CSR.	Identify talented workers. Access to resources and technology. CSR. Cross-pollination with university. Workers develop enthusiasm for learning.				Student time management.	Students learn to reflect in the workplace.	Technological competence.
To be included in engaged learning strategy?	No	Yes, maybe through WIL or S-L.	Yes.	Yes.	Yes, but possibly in combination with other methods.	Yes, to engage and explain key principles (small scale)	Yes	Supporting other strategies	Supporting other strategies	Supporting other strategies

3.6.1 Learning methods that could be employed in an engaged learning strategy

From Table 3-1 it is clear that an engaged learning strategy would contain a large proportion of community engagement (service learning), workplace engagement (WIL), classroom engagement (including some games and simulations) and that elements of the flipped classroom, use of selected technological aids and relevant assessment methods, such as portfolio assessment should also be employed in an engaged learning strategy. A detailed description of useful technologies and assessment strategies is warranted and therefore given below.

3.6.2 Learning technologies that could be employed in an engaged learning strategy

Although various learning technologies are available to support the methods that enable learning, the use of technology in teaching and learning should never be an end in itself (Gurubatham, 2014:247). The use of technology is an enabler of all the methods described in this chapter. Elements that could be used as part of the engaged learning strategy are:

- Productive use of the LMS and the Internet. This implies that all communication is via electronic media and that the submitted work and assignments could be in electronic format.
- Blended learning to augment the benefits of the flipped approach.

3.6.3 Assessment methods that could be employed in an engaged learning strategy

- Assignments, if they consist of live case studies.
- Peer assessment of group projects (project-based or service-learning) could be valuable, especially since all groups are involved in similar projects.
- Use of rubrics and templates, especially to guide peer assessment.
- Portfolio assessment is relevant for MBA students and would fit well within an engaged learning strategy.
- Patchwork texts, linked with work-integrated and/or service-learning projects, especially if the final summative assessment could be the “border of the quilt” and continuous assessments could be the building blocks.
- Note that these elements should be used with caution so as not to over-assess the students.

3.6.4 A critical comparison of the different methodologies

Table 3-1 shows a comparison of the different methods, based on the literature study. In the table, the elements that are usable in an engaged learning strategy are briefly shown, but at this stage, a detailed comparison of the different methodologies is warranted. In Table 3-1, experiential learning and action learning are combined, not because they are supposedly the same, but because many of the same elements appear in both methodologies, where experiential learning is more focused on in educational settings, and action learning is more focused on application in the corporate environment. In terms of applicability, action learning will not be discussed further.

The inclusion of methodologies into an engaged learning strategy would, therefore, happen on four levels. The first level is methodologies that should be used in its entirety, albeit designed to fit the requirements of an MBA student and an MBA programme. The second level consists of those methodologies that should be used by implication, but that could be built into the design of the first level learning methodologies. The third level of inclusion would be those that fit the face-to-face nature of the programme where the study is being conducted. When employed in an online environment, this level would be less evident than the first two levels. The fourth level consists of methodologies that are not included per se, but where particular elements are usable in specific circumstances.

On the first level, as explained above, experiential learning is not only the method that is most directly related to the constructivist learning theories listed in chapter 2, it is also the basis of a number of the other methods described in this chapter. In terms of value towards an engaged learning strategy, it must be regarded as the most fundamentally usable. Of the approaches that have developed out of experiential learning, service learning and work integrated learning are directly applicable, and should be used maximally. Service learning should be included, because it involves group work, and it directly addresses community engagement and is linked to the development of a number of generic skills. Work-integrated learning should be included, because it fits the profile of an MBA student that is full-time employed in a work environment where MBA principles are practised every day, and it involves very relevant individual application of knowledge in a student's work environment, provided it is presented as application in the actual workplace, not in a simulated environment.

On the second level, the principles of problem-based learning should be included, firstly because problem-based learning actively develops skills such as problem-solving, decision-making, teamwork and critical thinking, but also because solving problems shifts the focus from a theoretical perspective to practical application. This creates opportunities for deep learning and

the applicability of the theory in real-life contexts. However, when properly deployed, problem-based learning requires a dedicated approach from the lecturer, and as such the principles of problem-based learning should be embedded in other learning methodologies that are employed, such as service-learning and work-integrated learning. The imperative is that building elements of problem-based learning into the design of a strategy for engaged learning needs to be a carefully planned and well thought through exercise.

On the third level, methodologies that could have value are the careful use of exercises and practices that enable classroom engagement. This is because the perception of students entering a face-to-face course is that the real value-adding part of the experience happens in class, and the use of engaging practices addresses this preconceived conception while allowing real value-adding learning experiences to enable learning. This includes carefully selected exercises, dialogues, group discussions and other activities. The use of short, relevant, group-based games and simulations in class could be part of this element, provided it is not overemphasized.

Also on level three, one methodology that adds value, but could and should only be employed as part of a broader strategy is the careful use of the flipped classroom. The flipped classroom is valuable, because much time-consuming explanation is omitted from the classroom, enabling the students to take responsibility for their own learning, and it then creates a classroom focusing on the productive use of time for engaging exercises in class. In addition, new entrant MBA students have diverse skill levels, and a well-designed flipped classroom allows students to cover the material at a pace suited to their level of knowledge. Thirdly, the flipped classroom could be a valuable carrier for work integrated learning and problem-based learning, because the students could learn the knowledge while seeing its application in the workplace and then go back to refresh the knowledge, leading to deep learning.

On the last level, the use of traditional teaching methods should as far as possible be excluded on an MBA level of learning, except for briefing sessions early in the semester or for short periods of student-initiated discussions, when difficult concepts are explained.

The level of deep learning that takes place during reflection (as explained well in Kolb's experiential learning cycle), combined with the notion that reflection forms a critical part of most of the above-mentioned methodologies, warrant inclusion of a fair quantity of reflection in an engaged learning strategy, both to package the learning points and as a feedback mechanism to the lecturer. Within the time constraints of an MBA student, the process of reflection will have to be carefully planned.

The use of relevant technology should be a means to an end and not an end in itself. It is, therefore, advisable to use the relevant technology such as the learning management system and Internet-based resources to support learning. The use of online teaching at this stage is not part of the engaged learning strategy and will not be discussed further.

The assessment principle that stands out as most relevant to engaged learning is that it should be as timely as possible. Feedback on project-based learning, work integrated learning, service learning and other activities should happen as close to real-time as practically possible. To enable this, the use of time-saving technology, such as audio feedback used in conjunction with the learning management system, could be valuable. As an overall assessment strategy, the specific assessment method of patchwork texts fits with an engaged learning strategy and should be employed, because it involves the real-time element, portfolio assessment and it could dovetail well with work-integrated learning and/or service learning.

3.7 Chapter conclusion

In this chapter, different 21st teaching and learning methods were discussed. Methods that are applicable to an engaged learning strategy are experiential learning, possibly in the form of work-integrated learning and service-learning, and various classroom engagement exercises. A method that could be used in combination with, and as part of, other methods is project-based learning. Methods that could be used to support other strategies is the flipped classroom, reflective practices and the use of the correct technological tools. On a small scale, the use of games and simulations could be employed to explain key concepts. Traditional lecturing should as far as possible not be included in engaged learning.

Having discussed the different learning theories in chapter 2 and the methods how these theories are applied in the 21st century that could lead to engaged learning in chapter 3, the logical next question to answer would be what the content of the learning should be for an MBA course, especially if an engaged learning strategy is not subject-specific. For the sake of generalisability, subject-related knowledge is therefore excluded from this discussion, although it is reasonable to accept that an engaged learning strategy should lead to improved subject knowledge and understanding. The focus for the following chapter would be on the generic skills that would result from the strategy. In chapter 4 those generic skills (also referred to as employability skills or graduate attributes) that employers require from MBA graduates will be described and ranked, a

selection will be made of specific generic skills that should be developed through an engaged learning strategy, and instruments to measure these skills will be described.

The contribution of this chapter is that learning, which is one of the deliverables of a strategy for engaged learning as explained in chapter 2, is operationalised in this chapter in terms of practical methodologies that enable learning. The second secondary research objective is addressed with this chapter, namely, to identify appropriate learning methodologies that contribute towards an engaged learning strategy.

3.8 Chapter summary

Various learning methodologies that were developed in the 20th and 21st century are described and analysed for applicability in an engaged learning strategy. The use of the correct technological tools and assessment strategies to enhance engaged learning were also discussed. The elements of these methodologies, tools and assessment methods that would contribute to learning and engagement were highlighted, and a selection was made of methods to include in an engaged learning strategy.

CHAPTER 4

THE OBJECT OF LEARNING: GENERIC SKILLS

4.1 Introduction

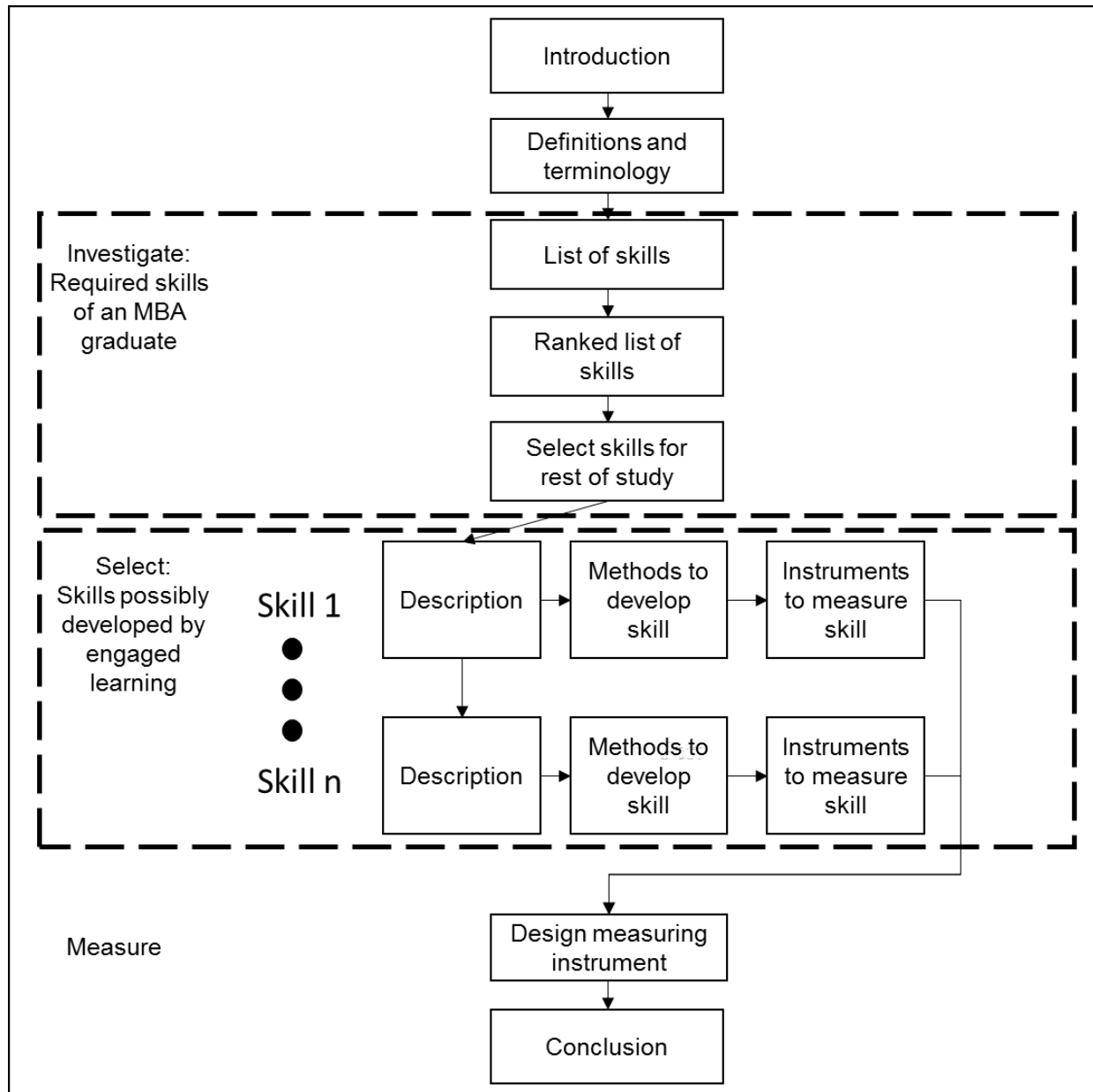
The essence of learning has been described in detail in chapter 2, where learning theories were discussed, and the elements that could be applicable for engaged learning were listed. In chapter 3, different methodologies were investigated that could be included in an engaged learning strategy. Previous generations have always assumed that the objective of learning is to accumulate subject knowledge. However, the global trend, as described in paragraph 1.3, is that universities should focus on more than subject knowledge, but that the focus should be on developing students so that they exhibit specific graduate attributes, also referred to as generic skills. Since the issue at hand is learning, and an engaged learning strategy should be suitable for most disciplines in an MBA programme, it is necessary to describe the object of the learning by answering the question: Apart from subject-related knowledge, what other skills should MBA students acquire while being exposed to engaged learning? The terms often used for these skills are “pervasive skills”, “generic skills”, “soft skills”, “employability skills” or “graduate attributes”.

The term “graduate attributes” is the most commonly used of these terms, referring to the kind of person the programme supplies to the world. The less commonly used terms “pervasive skills”, “generic skills” and “soft skills” are used to describe those *skills* that pervade across subject disciplines. In the first part of this chapter, these definitions are discussed and contrasted. For the remainder of the study, the term “generic skills” is used, mainly because an engaged learning strategy deals with skills that can be developed, and the term “generic skills” describes them well. However, the different terms describe virtually the same skill set, albeit from slightly different angles. The different definitions follow in paragraph 4.2.

The definitions are followed by a study of those skills that employers require from MBA graduates. Relevant recent research is unpacked, and a ranked list of skills is compiled. This list is an expansion of the list given in the introductory literature study in paragraph 1.3. From this ranked list, a selection is made of skills that are most applicable to engaged learning. This selection considers the demand of employers, as well as a possible match with engaged learning, based on previous research, and including other arguments, such as whether it is possible to develop this skill in one semester and whether there are perhaps specialised courses in an MBA programme that already aim at developing that skill. It must be noted that this list is not exhaustive,

that all the skills developed in an engaged learning strategy are not necessarily on this list, and that this list of skills might not apply to all MBA programs. There is considerable overlap between the arrays of generic skills described by different scholars. When a list of skills to test for in the empirical research was compiled, sources were consulted until saturation occurred, i.e. new sources were consulted until the difference between the list of skills or attributes listed in the new source and those in the list already compiled was negligible or merely semantic.

Figure 4-1: Structure of chapter 4



The selection of a list of skills to be included in the rest of the study is followed by an analysis of each of those selected skills, where it is described, recent research on methods that contribute to

the development of the skill are unpacked, and available instruments to measure the development of the skill are compared.

The chapter concludes with a list of generic skills to be included in the design of a measuring instrument for the empirical part of the study, compiled from the available instruments available to measure the selected skills.

4.2 Definitions and synonyms

4.2.1 Graduateness

The term “graduate”, in use since the late 1500s, comes from the Latin word “gradus”, which can be translated in English as “step” or “degree”. In late medieval Latin, it referred to “take a degree”, which led to the current use of the word in terms of university degrees (Oxford, 2015).

The term “graduateness” refers to the quality of personal growth and intellectual development of graduates and the relevance of the skills they possess when entering the workplace (Coetzee, 2014b:888). The concept “graduateness” can be traced back to the writings of John Newman in 1852 (Normand & Anderson, 2017:134). The term should not be confused with “scholarship”, which refers to a student or graduate’s attitude towards knowledge (Coetzee, 2014b:889).

The term “graduateness” therefore refers to the inherent quality of the student leaving the university after obtaining a degree.

4.2.2 Graduate attributes

The main reason for the increased interest in the topic of graduate attributes is the speed at which jobs become obsolete in the 21st century (Kalfa & Taksa, 2015:580).

A concise definition of graduate attributes is “...Graduate attributes are the qualities, skills and understandings students should develop during their time with the institution and consequently shape the contribution they can make to their profession and society...” (Aithal & Suresh Kumar, 2015:124; Barrie, 2006:239; Mager & Spronken-Smith, 2014:249; McCabe, 2010:1). This definition encompasses the following elements.

- Graduate attributes include personal qualities;

This definition of graduate attributes, therefore, includes the concept of gradueness (Jones *et al.*, 2015:2). Typical qualities that employers want in graduates include positive job attitudes (Lim *et al.*, 2016:190), student engagement (Buckless & Krawczyk, 2016:529), values and goals (Oh *et al.*, 2012:018), positive attitude, respect of others, trustworthiness, initiative and responsibility (Ahmed *et al.*, 2014:225), work-ethic (Coetzee, 2014a:1096; Gray & Koncz, 2015; Mihail & Kloutsiniotis, 2014:220), adaptability (Osmani *et al.*, 2015:377), self-motivation (Chakraborty *et al.*, 2017:118), creativity and risk-taking (Saxena & Bendale, 2014:652) and tolerance for ambiguity (Anis & Anis, 2017:349).

- Graduate attributes include skills

Skills mentioned as graduate attributes include communication, teamwork, problem-solving, technological skills, leadership skills and self-management (Osmani *et al.*, 2015:376). Other skills mentioned are decision-making, technical skills (Estrada-Worthington, 2015), analytical skills (Andrews, 2015), presentation skills (AMBA, 2014), negotiating skills (Mihail & Kloutsiniotis, 2014:220), critical thinking skills (Chakraborty *et al.*, 2017:120) systems thinking skills (Saxena & Bendale, 2014:652) and general managerial skills (Estrada-Worthington, 2015), which can be learned in a teaching and learning environment (Mager & Spronken-Smith, 2014:248).

- Understanding forms part of graduate attributes

Understanding includes concepts such as insight and strategic thinking (Andrews, 2015), and can, therefore, be developed through exposure to real-life situations (Mager & Spronken-Smith, 2014:248).

- Graduate attributes can be developed.

Research is unanimous that graduate attributes are skills that can be developed (Aithal & Suresh Kumar, 2015:129), both on institutional level, on curriculum level (Kember *et al.*, 2016:15; Matthews *et al.*, 2016:557) and on subject level (Hertzog & Swart, 2016:72; Hill *et al.*, 2016:162; Su, 2014:1218). Although the planning of the initiatives to develop graduate attributes is generally done well, assessment and evaluation lack, and professional development of graduate attributes is therefore left behind (Spronken-Smith *et al.*, 2015:1028).

- Graduate attributes are seen in professional contribution

The contribution a graduate makes after graduation is a direct result of the attributes they bring with them to the workplace (Jackson *et al.*, 2014:127; Kalfa & Taksa, 2015:593; Scott, 2014:57).

- Graduate attributes are applied in society (community)

The application of graduate attributes post-university goes beyond the primary workplace and is often also seen in the contribution made to society in general (Daniels & Brooker, 2014:75; Dowling *et al.*, 2015:61; Kalfa & Taksa, 2015:593; O'Leary, 2017:516; Orrell & Conway, 2016:153; Velliari & Breen, 2016:585). The link between graduate attributes and community involvement is a two-way association, since community involvement has also been proven to develop graduate attributes (Harland *et al.*, 2008:5; Weber, 2012:417).

4.2.3 Employability skills

The dictionary definition of skill is “the ability to do something well”, and the definition of employable is “suitable for paid work” (Oxford, 2015). Jackson (2014:222) therefore defines employability skills as “a broad range of skills deemed essential in the workplace”, in contrast to “exhibiting academic expertise in a chosen discipline”. This definition refers to skills generally overlapping with those usually called graduate attributes (as listed in paragraph 4.2.2) and skills generally associated with graduate attributes, such as teamwork, communication, self-management and analytic skills are listed in most research on employability skills (Jackson, 2014:240). Mishra (2014:50) refers to these as “soft skills”, but concedes that it must be accompanied by “hard skills”, such as accounting skills. Comparing the skills required in different countries, McCabe (2010:3) addresses the question of whether graduate attributes and employability skills is the same thing. This question is answered in paragraph 4.2.5.

4.2.4 Pervasive skills, or generic skills

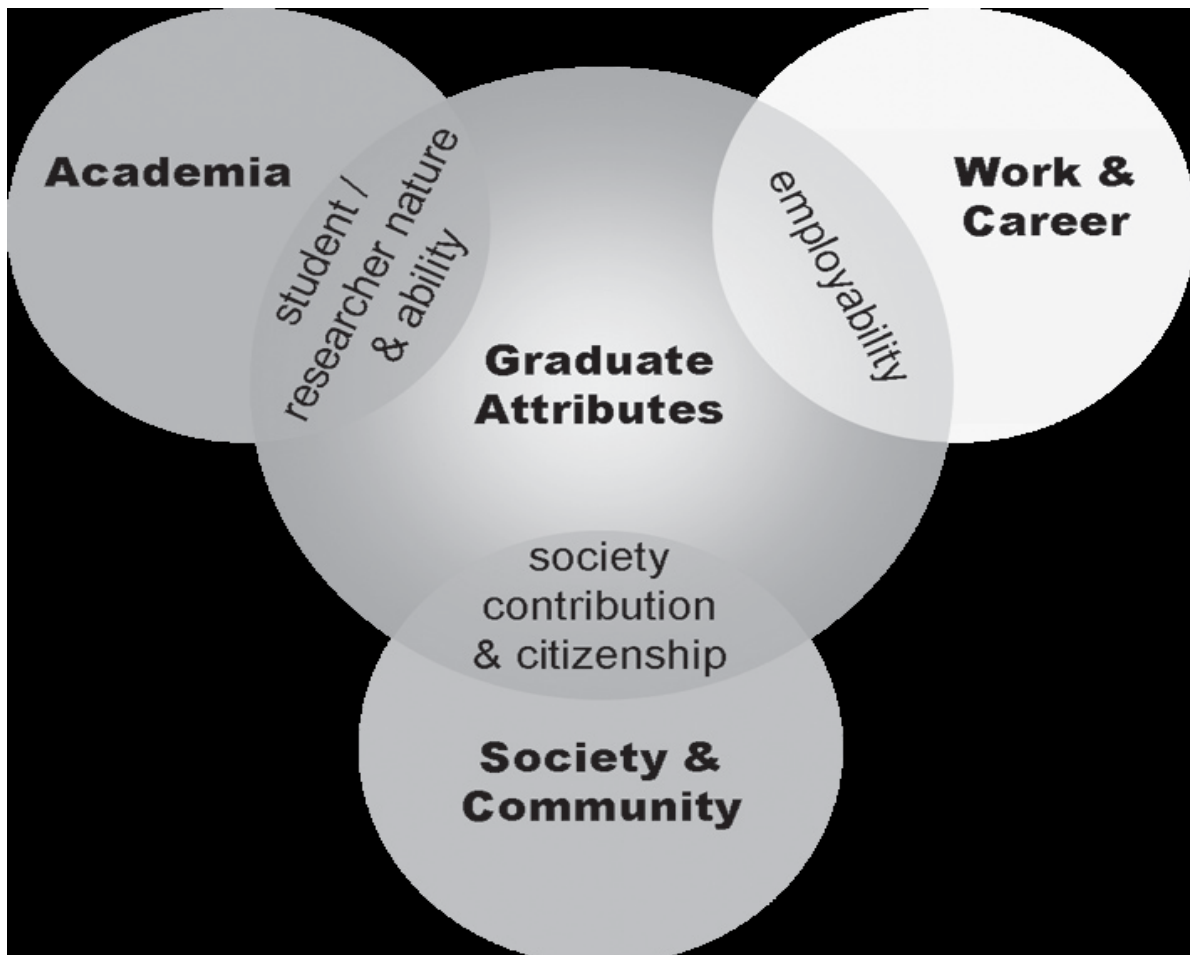
The word “pervade” is defined as “spread through and be perceived in every part of” and gives as synonyms “spread through, permeate, fill, suffuse, and be diffused through” (Oxford, 2015). Barac and Du Plessis (2014:55) define “pervasive skills” (also referred to as generic skills, since their definitions are identical), as those skills that are developed, regardless of the field of study or domain. Although this definition strictly refers to any skill (and could include skills as diverse as library skills and even the skills developed taking part in social activities), in academic literature the term refers to the same construct as “employability skills” (Clarke, 2018:14), and the two are often used interchangeably.

Muller and Young (2014:138) argue that the concept of generic skills is nothing new and that disciplines such as engineering have been a merger between different subjects such as mathematics, physics and chemistry since the time of Isaac Newton. They argue that the new drive towards generic skills could have significant effects on the nature of universities, such as dilution of subject-specific research and a total redefinition of the role of universities.

4.2.5 Comparing the definitions

Looking at the different definitions of graduate attributes, employability skills and generic skills, it seems such as the term “graduate attributes” encompasses the other definitions. The framework, shown in Figure 4-2, by the University of Edinburgh (McCabe, 2010:2) indicates how graduate attributes fit into the academic frame, how it interfaces with employability and how it must benefit society as a whole.

Figure 4-2: University of Edinburgh Graduate Attribute Framework



Source: McCabe (2010:2)

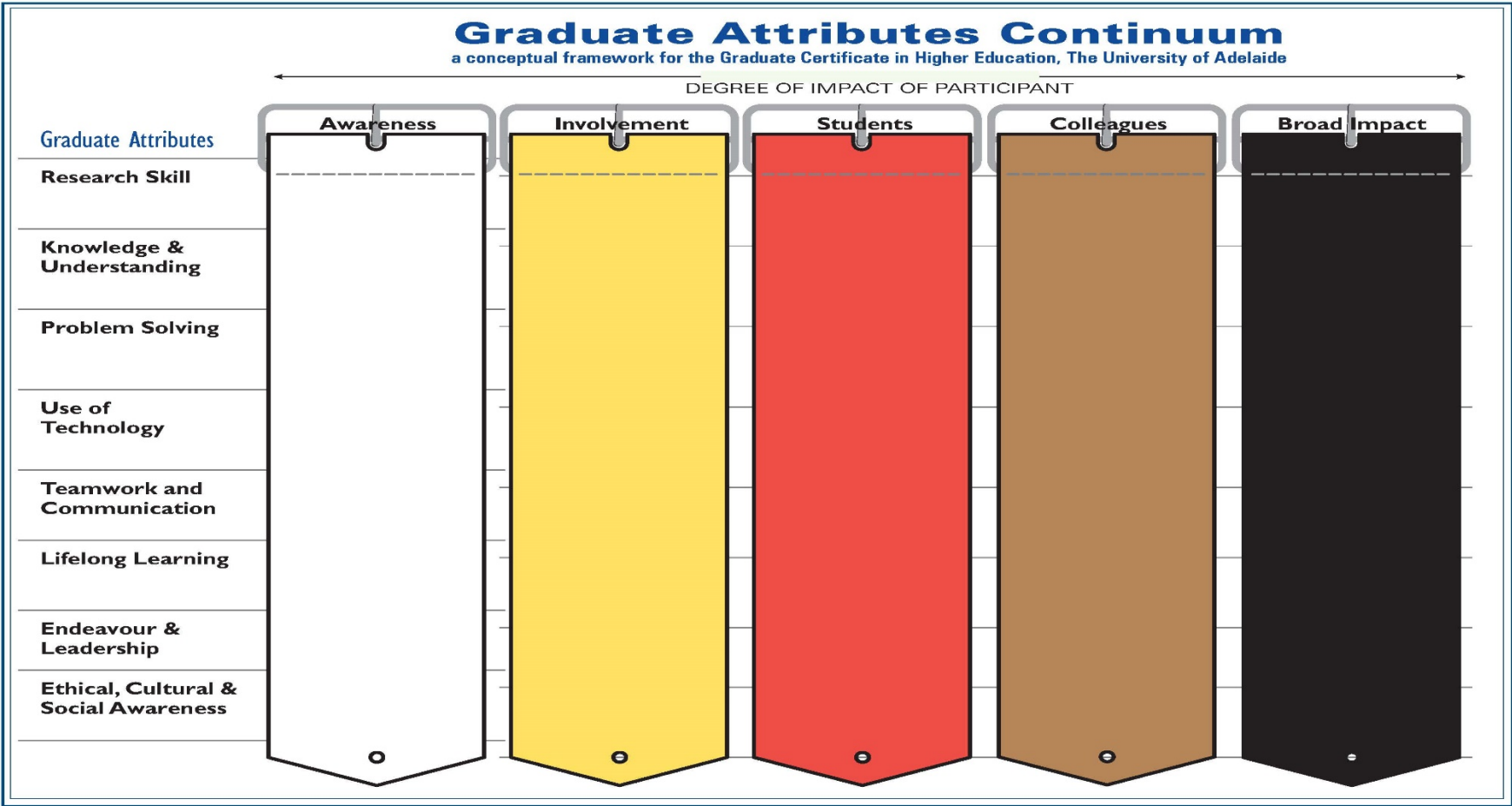
Notable is the distinction between those graduate attributes that are inherent characteristics and dispositions (Ahmed *et al.*, 2014:225; Anis & Anis, 2017:349; Buckless & Krawczyk, 2016:529; Chakraborty *et al.*, 2017:118; Mihail & Kloutsiniotis, 2014:220; Osmani *et al.*, 2015:377; Saxena & Bendale, 2014:651) and those that are skills-related and can be learnt (Coetzee, 2014b:900; Hertzog & Swart, 2016:72; Hill *et al.*, 2016:162; Spronken-Smith *et al.*, 2015:1028; Su, 2014:1218).

Although “graduate attributes” is the term that is more encompassing than the others, the focus for the rest of the study is on the development of specific, learnable skills through the engaged learning strategy, and hence the term “generic skills” will be used as a general term. The definition for generic skills that will be used for the remainder of the study is derived from the definition of graduate attributes given in paragraph 4.2.2 above, and reads: “...Generic skills are the skills students should develop during their time with the institution and consequently shape the contribution they are able to make to their profession and society...” (Aithal & Suresh Kumar, 2015:124; Barrie, 2006:239; Mager & Spronken-Smith, 2014:249; McCabe, 2010:1). In this working definition, the terms “qualities” and “understandings” are omitted from the original definition of graduate attributes, since the focus of this study is on skills development.

4.2.6 General research on generic skills

In terms of research on generic skills, Australia is the world leader, but countries such as Canada, the UK and New Zealand also give it prominence in their academic priorities (Jackson, 2016:1330; Kalfa & Taksa, 2015:593; Su, 2014:1218). The University of Adelaide in Australia has a continuum to guide faculty towards a concerted development of the needed generic skills for all students. In this continuum it shows that the concept of generic skills includes research skills, knowledge and understanding, problem-solving skills, the ability to use technology, teamwork and communication skills, an attitude towards lifelong learning, leadership skills and ethical, cultural and social awareness, but that these skills need to go beyond awareness, through involvement, and should impact not only students, but also colleagues and have a broader societal impact too. As students progress with their studies, their skill set should develop to exhibit the skills listed from left to right and from top to bottom on the continuum, as summarised in Figure 4-3 below.

Figure 4-3: University of Adelaide' Graduate attribute continuum



Source: (Adelaide, 2009)

4.2.7 Required generic skills for MBA students

The research on generic skills for MBA students reveals a long list of required skills. In chapter 1 (Table 1-1), a ranked list was developed of generic skills required of MBAs from studies published between 2014 and 2016. This ranked list was developed at the start of this research, and since this list was developed, several new publications in 2017 and 2018 also revealed generic skills required for MBA students. The differences between the two lists yield some interesting insights into the relative importance of specific skills, as will be elaborated on at the end of paragraph 4.2.7. Hence, Table 1-1 will be elaborated on in this paragraph, by comparing the generic skills in the ranked list in chapter 1 with the additional generic skills in later publications to find the most common and essential generic skills required of MBAs (Table 4-1). The generic skills identified from post-2016 publications would, for comparison purposes, subsequently be referred to as the unranked list of generic skills, and will be discussed in the following paragraphs.

.Hurst *et al.* (2018:278), in a study done in Canada, focus on the fast-changing nature of the 21st century and states that adaptive capacity is by far the most essential skill that MBA graduates should exhibit, because being adaptive would address other essential skills such as teamwork, communication, conflict resolution, and problem-solving skills. They also list (in order of increasing complexity) technical knowledge, delegation and coordination, dealing with limited resources, goal setting, budgeting, critical thinking, creative thinking, transfer of knowledge and ethical judgement. In another study, conducted in Europe (Hurst *et al.*, 2018:268), critical thinking, communication and presentation skills, teamwork and relationship building, self- and time management, leadership, and ability to see the big picture are listed as the most common required competencies for MBA graduates. Included in teamwork, especially in a diverse society, additional personal skills such as acceptance of diversity, work ethic and professionalism are also deemed essential.

Galbraith and Mondal (2017:40) agree that “soft skills” should also be culturally specific and should include cross-cultural training. In a study done in South Africa, Ronnie (2017:518) established that collaboration and coordination are the essential skills, often neglected by business schools and that being able to collaborate is crucial to the application of most of the generic skills. Osmani *et al.* (2017:62) found that faculty regarded communication, teamwork, problem-solving, creativity, critical thinking, time management and research skills as necessary. Jonck (2017:7) looked at perspectives in the public service in South Africa and lists problem-solving, teamwork, self-responsibility, research skills, communication, technological and

environmental literacy, and macro-vision as soft skills, but she also adds skills such as job-seeking skills, academic skills, personal management skills, interpersonal skills and work ethic.

Jones *et al.* (2015:2) investigated graduates' perceptions and their list goes beyond skills and includes positive attitude, respect, being energetic/work ethic, trustworthiness, taking responsibility, initiative, cooperation/teamwork, communication/interpersonal skills, ambition, being organized, self-confidence, discretion, critical thinking/analytic, personal appearance, leadership, strong personality, being courageous, sense of humour, dressing professionally, having compassion, writing skills, corporate knowledge, being a subject specialist, software skills, work experience and quantitative skills.

In a study comparing generic skills required by four distinctly different industries, communication, teamwork and self-management have been mentioned across all industries, but also featuring are adaptability, problem-solving, critical thinking, leadership, cultural awareness, creativity, computer skills, interpersonal skills, the ability to learn and initiative. A few character traits also featured, such as motivation, amiability, discipline, curiosity, drive for excellence and community orientation (Truong *et al.*, 2017:192).

Beenen *et al.* (2018:50) distinguish between interpersonal skills and other soft skills and classified the most common interpersonal skills needed by MBA graduates under five key categories, each with a few specific skills associated with it. The five categories are self-management, communicating with others, supportive relationship development, motivating others and conflict management (Table 4-1). In an open-ended questionnaire, other categories emerged, classified under "judgement and decision-making".

Table 4-1: List of “soft” skills categorised

Response category	Specific microskills listed under open-ended question “What soft skills do you look for in successful MBA applicants?”	
Managing-self, 13%	Self-management and awareness Professionalism/appearance Stress management Receiving feedback Emotional intelligence Flexibility Self-awareness Professional development Sense of humour Maturity Exudes a positive attitude Determination Accountability Organizational skills Shows confidence Interpersonal ethics Honesty Ethical reasoning Respect Values and ethics Trust	
Communicating, 25%	Communicating Candor in communicating Assertiveness Listening Written communication Communicating clearly Presentation/speaking skills Intercultural communication Interviewing skills	
Supporting, 24%	Supporting Being approachable Social intelligence Being open-minded People skills Encouraging teamwork Coaching and mentoring Showing empathy Sensitivity to diversity	
Motivating, 13%	Motivating Motivating others Providing vision Influencing Providing goals Leading Giving feedback	
Managing conflict, 7%	Managing conflict Political skills Diplomacy Negotiation Networking Conflict resolution Etiquette Issue selling	
Judgment and decision making,	Judgement and decision-making Judgment Analytical skills Decision making Strategic management Project management Intuition Problem solving Creativity Critical thinking Applying knowledge Transferring knowledge	

Source: Adapted from Beenen *et al.* (2018:40)

This list in Table 4-1 corresponds closely with the generic skills needed by accountants, where communication, teamwork and critical thinking are by far the most sought-after skills (Gardner, 2017:40), and it also corresponds to the viewpoints of graduates (Metilda, 2017:42).

Chen *et al.* (2017:27) label the attributes as “non-cognitive skills” and name, apart from many of those already listed, skills such as shrewdness, ability to capitalise on change, being able to adapt theory to practice and intuition as skills needed by MBAs (Jones *et al.*, 2017:424). Paterson (2017:63) compared the perceptions of lecturers and students, and although their lists were not identical, the same skills, such as communication, critical thinking, teamwork and problem-solving, were mentioned by all of them as most important.

Comparing generic skills mentioned in journal articles published in 2017, a list of more than a hundred generic skills is compiled. The complete list is given in Attachment 1. None of the sources places these different skills in a ranked order. Although some of these attributes appearing in the list refer to the same issue and are used as synonyms, they are merely counted to achieve some ranking. From an analysis of the skills listed, the most common attributes on this list are found to be teamwork, communication, critical thinking, problem-solving, leadership and cultural awareness.

In chapter one, a list was compiled in paragraph 1.3, comparing the generic skills from different studies since 2014 that ranked them in terms of importance. The six most highly ranked generic skills from that list, in order of decreasing ranking, are communication, teamwork, leadership, problem-solving, decision-making and self-management. Comparing the rankings in paragraph 1.3 with the frequencies of the most common skills listed in Attachment 1 produces the following table:

Table 4-2: Comparison between ranked and unranked lists of required generic skills

Graduate attribute / pervasive skill	Ranking from the list of skills listed between 2014 and 2016 (Par 1.3: Ranked on the position in various ranked lists)	Ranking from the list of skills listed in 2017 (Attachment 1: Ranked on frequency in unranked lists)
Communication	1	2
Teamwork	2	1
Leadership	3	5
Problem-solving	4	4
Decision-making	5	
Self-management	6	
Critical thinking		3
Cultural awareness		6

By far, the most common skills required are communication and teamwork. Leadership and problem-solving are also common to the two lists, whereas decision-making and self-management are on the 2014-2016 ranked list, and critical thinking and cultural awareness on the 2017 unranked list. Although cultural awareness did not appear *at all* in the ranked list of generic skills published before 2016, it rose to the sixth position out of hundred skills mentioned in the list of most required attributes published in 2017. This inclusion of cultural awareness on the list of articles appearing since 2017 could indicate a shift in the importance of cultural awareness.

4.3 Discussion of most important generic skills

Since the ranked and unranked lists of required generic skills for MBA graduates had only four common skills (communication, teamwork, leadership and problem-solving), it was decided to

expand the list to investigate the success of the engaged learning strategy by also including the non-common most prominent skills on both lists. Hence, the eight skills appearing in Table 4-2 will be evaluated in the strategy for engaged learning. For this purpose, these eight skills are discussed below.

4.3.1 Communication

Communication skills is a composite of active listening, oral communication, written communication, assertive communication and non-verbal communication (Bedwell *et al.*, 2014:177) and includes techniques (skills) such as listening with empathy and sympathy, listening for understanding, communicating emotion, clear expression, proposing of ideas, recognition of feelings and even facial expressions.

4.3.1.1 Importance of communication skills for MBA graduates

One reason that communication skill is of importance to MBA graduates is that it facilitates the transfer of knowledge in the workplace (Prince *et al.*, 2015:223). Iyengar (2015:10) found that communication is vital, because it is one of the primary competencies of leadership, and companies send their employees to study MBA to prepare them for leadership positions.

As the business world becomes more digitalised, communication skills, and notably oral communication skills, are assuming an increasingly important role in organisations, and MBA students must increasingly be able to exhibit this skill (Gomes & Yasin, 2016:356). Rennie *et al.* (2018:601) established that communication has increasing strategic importance in organisations and that MBA programmes should prepare graduates to be able to do strategic communication. Butz and Askim-Lovseth (2015:637) agrees and states that employers of MBA graduates deem communication skills so essential that it is included in the accreditation standards of the Association to Advance Collegiate Schools of Business (AACSB, which is one of the three most prominent accreditation bodies for MBA programmes in the world). Iyengar (2015:12) state that the need for honing communication skills is because communication skills are essential on senior management level and that an MBA is often seen as a way to groom employees for senior management. Brink and Costigan (2015:220) focused on oral communication and listed three types of oral communication, namely presenting, listening and conversing. They found that listening was the most sought skill in the workplace, followed by presenting and conversing. In the world where business is increasingly conducted across international borders, one specific benefit of communication skills is that it empowers students, notably from developing countries, with the ability to compete internationally (Ly *et al.*, 2015:105).

It is, therefore, essential to gauge the development of communication skills, especially oral communication skills, to determine whether engaged learning empowers MBA students to exhibit this skill.

4.3.1.2 Developing communication skills

Natarajan and Kumar (2014:6), Gayathridevi and Deepa (2015:100), and Brink and Costigan (2015:216) suggest that communication skills, and more specifically interpersonal communication skills, should be developed by including it in the curriculum. Although the theory of communication could be taught using relevant lecturing, the skill to communicate in writing or orally needs to be developed by being practised (Avolio, 2015:13). Sangwan and Garg (2017:112) further argue that communication skills being taught or developed in a classroom is mostly ineffective, and they suggest that work-integrated learning, as a form of experiential learning (par 3.3.4), is an excellent platform in which communication skills can be developed, especially when carried out in a real-life business. In addition, they support Gayathridevi and Deepa (2015:102), who elucidated the benefits of simulations as an educational tool to develop communication skills.

For Avolio (2015:13) critical and analytical essays, as well as preparing and presenting case studies hold great value for developing written and oral communication skills. In the same vein, Carter *et al.* (2016:390) investigated the effect of joint research projects on communication, teamwork and leadership, and found that communication, as a whole, is the only skill significantly developed by such projects. Although all the elements in the communication process (sending, receiving, message, barriers and feedback) should be integrated effectively for effective communication successfully, the importance of feedback has been emphasised in various studies. Sangwan and Garg (2017:112) state the importance of feedback on the development of communication skills. According to Bedwell *et al.* (2014:182), feedback should be honest and timeous to promote real learning.

In terms of learning theories, there is a connection between most of the epistemologies and communication skills. Some of the ancient learning methods (par 2.4), such as the use of parables in ancient China and in Jesus' time, rely heavily on communication skills, as do the Socratic and stoic notion that learning takes place during dialogue and Plato's promotion of critical reflection. Even in instructivist monastic medieval schools (par 2.4.6), learning was seen as the result of communication. In the behaviourist epistemologies (par 2.5) the reward that results from certain stimuli acted as non-verbal communication, and cognitivist theories, such as those of Dewey (learning as a social instrument), Piaget (scaffolding as a learning aid) and especially Vygotsky (the effect of social interaction on learning) also rely on communication as a prerequisite for

learning to take place. In constructivist theories (par 2.7) communication skills such as presentation and reflection are vital steps in the learning process. The value of communication is especially emphasised in group work that is an element of social constructivism.

Drawing from the information in chapter 3, the development of communication skills have been mentioned as being a benefit of some of the 21st century learning methodologies. These include experiential learning (par 3.3.1) (Fuller & France, 2016:205; Hodge *et al.*, 2014:15), work-integrated learning (par 3.3.4) (Barth *et al.*, 2014:80; Hébert & Hauf, 2015:48; Jensen *et al.*, 2014:328), problem-based learning (par 3.3.5) (Rob *et al.*, 2009:92) and especially classroom engagement exercises (par 3.3.7) (Choi & Rhee, 2014:17). In addition to the abovementioned methodologies, all of which contribute to an extent to the development of communication skills, reflective practice (par 3.3.9) is the one methodology making explicit use of communication and therefore focus extensively on the development of communication skills (Swanwick *et al.*, 2014:167).

4.3.1.3 Measuring communication skills

Butz and Askim-Lovseth (2015:638) suggest that students should prepare and deliver a professional presentation on some business issue and that this should be assessed on an assessment rubric by both peers and the lecturer. Since communication skill consists of more than one sub-category (electronic or paper-based writing, individual and group discussion, multi-media communication and non-verbal communication), Butz and Askim-Lovseth (2015:630) further suggest that a rubric measuring communication should include at least the following five categories: organisation, content, delivery, audio-visual aids and time management.

The use of interview-based assessment to measure communication skills is considered to be time-consuming, and hence alternative forms of measuring communication skills, especially electronic measuring instruments, are seen as less time-consuming, but still accurate, ways of measuring communication skills (Hardianti *et al.*, 2017:128).

In a study to predict below-average communication skill, Rasipuram and Jayagopi (2016:371) compared face-to-face interviews with independently rated video interviews, including software-based analysis of speaking activity (such as pauses and speaking turns longer than 2 seconds), and some “prosodic features” (such as pitch, intensity and loudness) and non-verbal clues (smile, gaze, gestures and head motion). Although the computerised predictions were not as accurate as actual face-to-face (92%) or Internet-based (88%) interviews in predicting below-average communication skills, both predictions still revealed valuable results (80% for recorded Internet-

based interviews and 83% for recorded face-to-face interviews), and the use of computerised analysis of video recordings were motivated as a valid method to measure communication skills.

4.3.2 Teamwork skills

Teamwork includes any activity conducted in either formal or informal teams. (Gordon *et al.*, 2015:576; Loughry *et al.*, 2014:17). Although largely overlapping, the concept of teamwork is sometimes confused with group work. In work or study settings, teamwork refers to formal teams with interdependent members, working towards a common goal, whereas group work refers to two or more people, who are independent in their accomplishments, and who may even work in different areas (Raes *et al.*, 2015:8). According to Parratt *et al.* (2016:84), teamwork skills entail a set of behaviours that can be learnt, which provide the individual with the capability of working towards team goals while maintaining their integrity. From this definition the following elements emerge: Teamwork skills can be learnt (Azizan *et al.*, 2018:12), teamwork skills demonstrate a set of behaviours (Dooley & Sexton-Finck, 2017:102), shared goals (McEwan *et al.*, 2017:20), and integrity (Gibert *et al.*, 2017:84). Most of the items found in instruments that measure teamwork skills relate to the elements of this definition.

4.3.2.1 Importance of teamwork skills for MBA graduates

Research on teamwork is unanimous that it is one of the three top generic skills required by employers, although not actively taught at university, and especially not in MBA programmes (Brocato *et al.*, 2015:95; Hobson *et al.*, 2014:193). Since students in the 21st century are growing up in the age of social media and mobile phones, the nature of their interaction became more digitised (Brocato *et al.*, 2015:86), which has a significant impact on how teams cooperate in the workplace (Loughry *et al.*, 2014:18). Where teamwork initially occurred face-to-face, the digital era enabled teams to work beyond geographical boundaries. This change in cooperation pattern has increased the importance of teamwork skills, not just in the workplace, but also as a deliverable of an MBA programme (Bedwell *et al.*, 2014:184).

4.3.2.2 Developing teamwork skills

Bedwell *et al.* (2014:173) propose that the best way to develop teamwork skills in an MBA course is to practice it using various experiential learning techniques. Experiential learning techniques were also suggested by Hadley *et al.* (2016:6), who refers to the use of simulation games to hone teamwork skills. The use of games for developing teamwork skills was also confirmed in medical education by Evans *et al.* (2014:580); Marton *et al.* (2015:158); Rashid and Gianduzzo (2016:15).

In addition, all scholars on the topic of the development of teamwork skills agree that, regardless of the technique used to develop teamwork skills, students can only develop their teamwork skills if they are participating in teams (Evans *et al.*, 2014:580; Fox *et al.*, 2017:8). Lecturers should, therefore, go beyond group work and the teaching of teamwork skills, and rather create a learning environment conducive to teamwork functioning and the practice of teamwork skills. (Betta, 2016:73; Denison, 2018:43; Konak *et al.*, 2015:3). The possibility of using service-learning programmes to hone teamwork skills could also contribute, as Busse *et al.* (2014:70) found that volunteer programs practically develop teamwork skills.

In terms of the psychological support needed for developing teamwork skills, Thacker and Yost (2002:93) investigated four strategies to improve teamwork skills in workplace teams and student teams, namely assertiveness, support, exchange and trust. Assertiveness had a negative effect on both workplace and student teams, exchange had a positive effect on workplace teams and no effect on student teams, and support and trust had a positive effect on both workplace and student teams.

Donia *et al.* (2018:97) researched the effect of peer feedback on teamwork skills in a three-year longitudinal study and found that peer feedback does develop teamwork skills, irrespective of the existing level of teamwork skills and that teamwork skills that are developed in the classroom are transferable to the workplace.

The link between the different learning theories and teamwork is evident in the application of andragogic principles (par 2.3), which indicate that adults learn better in teams (Smith, 2017:9). Teamwork is also evident in the cognitivists theory of Lev Vygotsky, who refers to the learning that takes place in groups and in the constructivist theory of John Dewey, who emphasises teamwork creates knowledge, (par 2.7) (Hay, 2016:533; Schreiber & Valle, 2013:409; Thomas *et al.*, 2014:17; Yoders, 2014:19).

Learning methodologies that report teamwork as one of the skills developed when those methodologies are employed, are experiential learning, (par 3.3.1) (Fuller & France, 2016:205; Hodge *et al.*, 2014:15), action learning, (par 3.3.2) (Edmonstone, 2015:140), service-learning (par 3.3.3) (Barth *et al.*, 2014:80; Hébert & Hauf, 2015:48; Jensen *et al.*, 2014:328), work-integrated learning (par 3.3.4) (Burns & Chopra, 2017:15; Jackson, 2015:366), and problem-based learning, (par 3.3.5) (Davidson & Major, 2014:26; Tamim & Grant, 2013:84).

4.3.2.3 Measuring teamwork skills

There are several questionnaires that measure teamwork skills. Brock *et al.* (2017:132) have compiled a measuring instrument to gauge teamwork skills. Hastie *et al.* (2014:225) have compiled a rubric to assess teamwork in the medical field, and this rubric was validated by Parratt *et al.* (2016:84). Hobson *et al.* (2014:205) use a simple checklist-type instrument to measure teamwork skills amongst MBA students. These instruments are all summarised in Attachment 2.

A computerised learning analytics systems, where the interaction is tracked, and the frequency of interaction per person is noted and quantified, has been employed to test the activity of each member of a team (Fidalgo-Blanco *et al.*, 2015:155) and was found to be effective. The benefits of this system are that it is not based on perceptions of the value of the teamwork, but uses primary data and works in real-time so that deficient team cooperation can be identified and corrected in time.

4.3.3 Leadership

Definitions of leadership vary from intuitive definitions to highly academic definitions (Armstrong & Taylor, 2014:641; Ayub *et al.*, 2014:505). Most definitions of leadership skills include the element of the ability to inspire and guide others toward building and achieving a shared vision (Gregoire & Arendt, 2014:518). In the early 1900s, leadership was approached from the angle of its traits, such as directing people toward shared goals, motivational ability, and adaptability. In the 1950s and 1960s the behavioural approach became commonplace, with models such as Blake and Mouton's leadership grid (Bachrach *et al.*, 2017:165; Rego *et al.*, 2017:50), followed by the power/influence approach (Martinko *et al.*, 2018:131), contingency/situational leadership approach (Lynch, 2015:9), and reciprocal leadership approach (Gregoire & Arendt, 2014:513).

These different approaches have given rise to various leadership typologies, such as transactional versus transformational leadership (Deichmann & Stam, 2015:217; Muenjohn & Armstrong, 2015:281; Popli & Rizvi, 2015:68), with the latest being ideological leadership, pragmatic leadership, authentic leadership, ethical leadership, spiritual leadership, distributed leadership, integrative public leadership and servant leadership (Anderson & Sun, 2017:94).

4.3.3.1 Importance of leadership for MBA graduates

Galbraith and Mondal (2017:140) found a strong link between leadership and organisational performance, hence the importance employers place on leadership as a critical outcome of an MBA (Vohra *et al.*, 2015:26). From a research project conducted by Jacobs *et al.* (2017:70) on

the skills of an MBA for pharmacists, they discovered that leadership is regarded as the most required skill within this context.

4.3.3.2 Developing leadership skills

The starting point for improving leadership skills is to be aware of its importance (Farver *et al.*, 2016:504), and this could be shared using traditional teaching methods. Other ways to develop leadership skills in MBA programs is to build it into the curriculum (Schuhmann *et al.*, 2014) and to use live consultancy programs for students, rather than the analysis of case studies.

The use of group work to develop leadership skills is a common thread in all research, whether MBAs are employed in pharmacy (Jacobs *et al.*, 2017:70), sports development (Cotterill, 2017:24) or medicine (Frich *et al.*, 2015:672). Vohra *et al.* (2015:26) describe how group work in small groups play an important role in developing leadership skills, but contend that it needs long-term engagement. Bedwell *et al.* (2014:184) concur that the use of practical application and experiential exercises is the best way to develop leadership skills. The same sentiment comes from Ebrahimi and Azmi (2015:850), who describe the different elements of leadership that could be developed, namely self-efficacy, ability to motivate, and specific skills associated with leadership, such as communication with superiors, interviewing methods, conducting meetings and giving feedback. Ebrahimi and Azmi (2015:850) advocate that these skills first be taught before being developed in groups.

Fernandez *et al.* (2015:350) describe a project where a group of middle managers from the medical field were subjected to an intensive training project to develop 20 leadership skills that were pre- and post-tested. The list of skills includes some core leadership skills (self-awareness, communication, negotiation, conflict management, visioning, innovation, emotional intelligence, transformational leadership, reflective leadership and career management) and some organisational/institutional leadership skills (creating/impacting organisational culture, systems thinking, succession planning, change management, cultural competence, stakeholder analysis, futuring, collaboration, innovation and advocacy). The training consisted of personal executive coaching, peer coaching, online tutorials, programme readings, webinars, conference calls, confidential online leadership journaling, book assignments, and mentoring. A statistically significant improvement was recorded on all 20 skills measured (Fernandez *et al.*, 2015:351). Baron (2016:309) found that participation in an action learning project makes a statistically significant difference in self-reported leadership skills.

In terms of the effect of learning methodologies on leadership development, as described in paragraph 3.6, it has been found to be one of the deliverables of service-learning (Lester *et al.*, 2005:293).

4.3.3.3 Measuring leadership skills

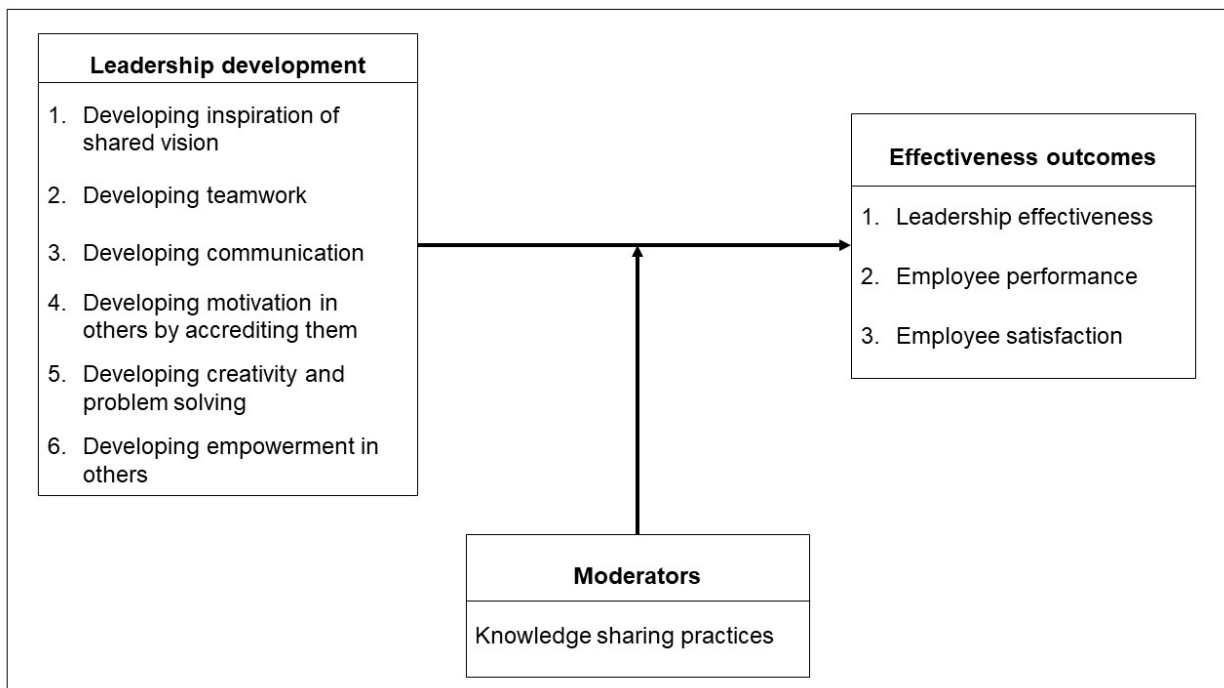
Ebrahimi and Azmi (2015:850) tested a model, given in An important issue to keep in mind when designing a measuring instrument was mentioned by Ebrahimi and Azmi (2015:825). In longitudinal studies, a simple pre/post-test is administered at the start of the intervention and again at the end of the intervention. In contrast, a retrospective pre/post-test is only administered at the end, but participants are requested to assess their skill level as it was before the intervention, compared to where it is after the intervention. When assessing skills development, a retrospective pre/post measurement has been found to be more accurate than a simple pre-post measurement, because in a simple pre/post-test participants often over-estimate their skill level before being exposed to training or sensitisation about the skill being acquired ("they do not know what they do not know").

Figure 4-4, describing the outcomes when leadership skills are developed.

In the model, developing skills such as the ability to inspire, developing teamwork, communication, motivating, creativity and empowering people (as independent variables) should have a measurable effect on the effectiveness of the leader and the performance and satisfaction of employees (as dependent variables), but this ability is moderated by knowledge sharing practices in the organisation. The model was tested using existing questionnaires for transactional, transformational and servant leadership and was found to be valid and reliable. Another independent variable was initially included in the model, namely “developing trust”, but was found not to have a statistically significant influence, and was subsequently removed from the model. The measurement instrument was a simple retrospective pre- and post-test where participants were completing a 20-item questionnaire where participants were asked to rate their skill level before and after the programme. Two columns were printed next to each other with a five-point Likert scale ranging from 1 (unskilled), through 2 (low skills), 3 (moderately skilled), 4 (good skills), to 5 (highly skilled).

An important issue to keep in mind when designing a measuring instrument was mentioned by Ebrahimi and Azmi (2015:825). In longitudinal studies, a simple pre/post-test is administered at the start of the intervention and again at the end of the intervention. In contrast, a retrospective pre/post-test is only administered at the end, but participants are requested to assess their skill level as it was before the intervention, compared to where it is after the intervention. When assessing skills development, a retrospective pre/post measurement has been found to be more accurate than a simple pre-post measurement, because in a simple pre/post-test participants often over-estimate their skill level before being exposed to training or sensitisation about the skill being acquired (“they do not know what they do not know”).

Figure 4-4 Ebrahimi & Azmi leadership development model



Source: Ebrahimi and Azmi (2015:850)

Most leadership questionnaires measure leadership style, rather than skill level (Antonakis & House, 2014:769; Renko *et al.*, 2015:72; Walumbwa *et al.*, 2008:120). The ones that measure skills are aimed at some skill that is considered to be a part of leadership, such as emotional intelligence (Carson *et al.*, 2016:44), teamwork performance (Cooper *et al.*, 2016:99) or motivational ability (Kyllonen *et al.*, 2014:7). Also, leadership tests do not accurately capture character traits that form part of leadership skills, such as personality, goals, motivation and preferences (Borghans *et al.*, 2016:13358; Kautz *et al.*, 2014:7). Even instruments measuring the development of different leadership styles, measure the different sub-skills included in that style. Winston and Fields (2015:432) measured the development of servant leadership skills, but their instrument measure attributes such as humility, integrity and caring for others.

4.3.4 Problem-solving

Most definitions of problem-solving involve creating a bridge between a current state, which is not desirable, and a desirable state (Greiff *et al.*, 2014:82). Hesse *et al.* (2015:38) define problem-solving as an activity in which a person perceives a discrepancy between a current state and the desired state and recognises that this discrepancy does not have an obvious solution and therefore acts to try and achieve the desired state (Wüstenberg *et al.*, 2016:1040). Although

various problem-solving processes exist, all of these processes follow the same elementary steps, albeit sometimes labelled differently, which include identifying the problem, defining goals, exploring alternatives, anticipating outcomes, selection of a solution, and reflecting on the solution (Proctor & Brestan-Knight, 2016:67). The first two steps clearly show the two alternative states in the definition, namely identification of the problem (current state) and definition of goals (ideal state).

The implicit link between creativity and problem-solving has been firmly established by Bennett *et al.* (2015:431); Gaither *et al.* (2015:602); Montag-Smit and Maertz Jr (2017:9). In essence, these authors agree that problem-solving not only requires creative thinking abilities, but they promote the development of creative thinking skills. Hesse *et al.* (2015:39) goes further and state that problem-solving should be a collaborative effort. This collaboration should be based on three elements, namely communication, cooperation and responsiveness. From this definition, they define collaborative problem-solving as approaching a problem responsibly by working together and exchanging ideas.

Despite the link between creative thinking and problem-solving, (Desai *et al.*, 2016:28; Hargrove & Nietfeld, 2015:316) argue that problem-solving also requires critical thinking skills, and that the development of critical thinking skills also enhance problem-solving skills. In this regard, Mumford *et al.* (2017:28) identify a list of nine problem-solving skills that should be considered critical when solving problems. These nine skills are:

- Defining the real issue to be solved;
- analysing the causes and goals relevant to the problem;
- identifying the constraints influencing a viable solution;
- formulating plans and mental simulations, based on the analysis of the goals and constraints;
- forecasting and anticipating the implications of executing the plans;
- formulating alternatives;
- evaluating the alternatives;
- evaluating the appropriateness of the different alternatives; and
- making sense of the solution.

4.3.4.1 Importance of problem-solving skills for MBA graduates

Since the ability to solve problems is the key to success in most careers (Iyengar, 2015:11; Kappelman *et al.*, 2016:69; Natarajan & Kumar, 2014:6), problem-solving skills are also one of

the critical competencies people expect from MBA graduates. Being able to solve problems will enable MBA graduates in management positions to effectively deal with key issues on a day-to-day basis in the workplace (Gupta *et al.*, 2015:368)

4.3.4.2 Developing problem-solving skills

Although the mechanism of problem-solving can be taught in a traditional classroom (Van Aken & Berends, 2017:1), the essence of developing problem-solving skills lies in actually solving problems. Traditional teaching methods do not create sufficient opportunities for the development of problem-solving skills (He *et al.*, 2017:10; Klegeris *et al.*, 2017a:11), and therefore the most successful proven method to develop problem-solving skills is problem-based learning (Carvalho, 2016:46; Delaney *et al.*, 2017:221; Klegeris *et al.*, 2017a:11).

Despite problem-based learning, other methods, which also contribute to the development of problem-solving skills are case-based learning (He, 2015:68; Yoo & Park, 2015:171), action learning (paragraph 3.3.2) (Edmonstone, 2015:140), service-learning (paragraph 3.3.3) (Barth *et al.*, 2014:80; Hébert & Hauf, 2015:48; Jensen *et al.*, 2014:328), work-integrated learning (paragraph 3.3.4) (Burns & Chopra, 2017:8-10, and the use of games and simulations (paragraph 3.3.6) (Wang & Wang, 2017:300), and reflective practice (par. 3.3.9) (Green & Black, 2017:364; Konak *et al.*, 2014:21; Miller & Maellaro, 2016).

Apart from problem-based learning as discussed above, problem-solving skills have been proven as one of the attributes that develop through learning methodologies such as action learning (par 3.3.2) (Edmonstone, 2015:140), service-learning (par 3.3.3) (Barth *et al.*, 2014:80; Hébert & Hauf, 2015:48; Jensen *et al.*, 2014:328), work-integrated learning (par 3.3.4) (Burns & Chopra, 2017:8-10, and the use of games and simulations (par 3.3.6) (Wang & Wang, 2017:300).

4.3.4.3 Measuring problem-solving skills

For research purposes, problem-solving is the one skill that could be empirically tested by supplying students with specific problems to solve, and then evaluating their ability to solve problems qualitatively and/or quantitatively. This method is often used in the STEM (science, technology, engineering and mathematics) and computer science disciplines, where mathematics-type problems supply an accurate measurement of a student's problem-solving ability (Özsoy & Ataman, 2017:80). In teaching and learning, various methods to assess the development of problem-solving skills exist. However, Hwang *et al.* (2014:143) propose the use of peer assessment if problem-solving is developed through game-based methods, whereas

Goldhammer *et al.* (2014:665) used a computer-based test method to test problem-solving skills. Despite the method used to assess problem-solving skills in a teaching and learning environment, lecturers should always align the assessment with the needs of the students.

4.3.5 Decision-making

There is considerable overlap between the skill sets of problem-solving and decision-making, especially in the mechanistic steps involved in the traditional processes, in the benefits of group interaction when conducting them, and in the skill sets required for both (Saunders, 2017:S245). Decision-making is the topic of the study field of operations research, also known as management science (Anderson *et al.*, 2015:3), but decision-making is increasingly a skill that is used for behavioural sciences (Beach & Lipshitz, 2017:100).

Classical decision theory describes decision-making as a predictable process made by a reasonable person, called the “economic man” (Beach & Lipshitz, 2017:87). The classical decision-making process views the decision-maker as facing a clearly defined problem, knowing all the alternatives and their consequences and being able to choose the optimum alternative (Shaban, 2015:7), most commonly found in the exact sciences and laboratory settings.

Since the 1980s, the behavioural aspect of decision-making has become more evident, as researchers realised the cognitive limitations of rationality (Shaban, 2015:8). In the 21st century, the playing field is changing drastically, since many of the classical decisions can now be automated. Technology started to play a critical role in decision-making with the use of expert systems, artificial intelligence and other computer-based decision-support systems (Betsch & Haberstroh, 2014:370). The field of decision-making has therefore moved toward group decisions and qualitative decisions (Xu & Wang, 2016:33), requiring specific human input.

4.3.5.1 Importance of decision-making skills for MBA graduates

From the traditional view of decision-making, it consists of distinct stages, which include identifying the issue, considering possible options, making judgements and then making a decision by combining information and values, followed by an evaluation of the decision. This sequence of steps forms the basis of many structured management processes, such as the factor-rating method of location evaluation in operations management and investment decisions in financial management (Heizer *et al.*, 2016:324). Although the mechanistic steps can be automated, the value judgement involved in selecting the correct option when making a decision often needs human intervention (Mukherjee *et al.*, 2018:62).

In the fast-changing 21st-century business environment, managers increasingly have to make difficult decisions daily (Beach & Lipshitz, 2017:99). Hence the nature of decision-making has moved towards ethical decision-making, which is one of the core elements of most leadership theories (Hoyt & Price, 2015:538; Shapiro & Stefkovich, 2016:132; Smith, 2014:1620) and with significant scandals taking place in the business world, such as the Enron and Arthur Andersen scandals (Ailon, 2015:97), the importance of ethical decision-making is highlighted (May *et al.*, 2014:667).

4.3.5.2 Developing decision-making skills

There are various formalised decision-making algorithms, such as brainstorming and the Delphi method (Joseph-Williams *et al.*, 2014:709; Sinuff *et al.*, 2015:1079), which enable the practical application of decision-making skills. Since the epistemological roots of teaching decision-making resonate in cognitivism (par. 2.6) (Gupta & Chintalapati, 2017:47; Manolis *et al.*, 2013:51; Poore *et al.*, 2014:246), group decision-making during the use of team-based simulation, has also been proven to contribute toward to development of decision-making skills (Crego and Harris (2017:210). However, proper planning is essential to achieve the desired results (Kaner, 2014:7; Pérez *et al.*, 2014:497).

Since decision-making is essentially the final step in the problem-solving process, decision-making skills are developed by solving problems and making decisions, and as such methodologies such as experiential learning (par 3.3.1) (Dietz *et al.*, 2017:63), service-learning (par 3.3.3) (Chung & McBride, 2015:199; Huda *et al.*, 2018:30; Lavery & Coffey, 2016:11) and work-integrated learning (par 3.3.4) (Jackson, 2015:365) have been found to measurably develop decision-making skills. Problem-based learning (par 3.3.5) has also been proven to be a powerful method to develop decision-making skills (Carvalho, 2016:46; Delaney *et al.*, 2017:221; Klegeris *et al.*, 2017a:11).

4.3.5.3 Measuring decision-making skills

In the field of training of pilots, a validated instrument was developed to measure (on a five-point Likert scale ranging from “very poor, through “poor”, “acceptable”, and “good” to “very good”) pilots’ non-technical skills, including, amongst others, decision-making. The sub-areas of decision-making developed and tested were problem definition and diagnosis, option generation, risk assessment and option selection and outcome review (Flin *et al.*, 2017:110).

The OECD “Program for International Student Assessment” (PISA) questionnaire is a validated test with a data bank of questions about geography, mathematics, economy and people, that is often used for pre-post testing of decision-making skills (Klegeris *et al.*, 2017a:11), used mostly for evaluation of school learners.

The OPTION scale for decision-making is a tool used in the health sector. OPTION (Observing Patient Involvement in Decision-making) was designed by Elwyn *et al.* (2003:96) to measure patient involvement in decision-making (Couët *et al.*, 2015:550). Olson *et al.* (2017:83) used a questionnaire developed by Mincemoyer and Perkins to measure decision-making skills in people who enter adulthood. Dettlaff *et al.* (2015:33) validated a self-developed instrument for child protection services to measure decision-making. Some of the items on these questionnaires could be valuable to measure decision-making skills that are developed through the engaged learning strategy.

4.3.6 Self-management

Self-management is the skill of taking responsibility for one's own attitudes, behaviour and general well-being relating to job performance (Wesley *et al.*, 2017:89). Savitz-Romer *et al.* (2015:26) refer to self-management skills as intrapersonal skills consisting of elements such as adaptability, conscientiousness, developing strong personal values, ethical behaviour and decision-making, future time perspective, managing emotions, openness, internal locus of control, self-concept, self-direction, self-efficacy, stress management, taking initiative, risk-taking and understanding expectations. Wesley *et al.* (2017:83) elaborate on this list, adding elements such as goal setting, organising people and resources, monitoring progress, time-management and planning.

From the above, it can be summarised that self-management is a composite skill consisting of a number of elements, all directed towards the individual management of different aspects of a person's performance.

4.3.6.1 Importance of self-management skills for MBA graduates

One of the benefits of an MBA programme is that a graduate can transfer the skills learnt in an academic setting to the workplace. Self-management is one skill that enables this transfer (Prince *et al.*, 2015:223; Scott *et al.*, 2017:9). Jackson and Collings (2017:760) found that one significant benefit of self-management skills is that it enables MBA graduates to successfully manage their careers in a meaningful manner (Steger *et al.*, 2012:14). Linking to other skills, Wesley *et al.*

(2017:97) found self-management skills to be a core component of other necessary skills, such as communication, leadership and teamwork skills.

4.3.6.2 Developing self-management skills

According to Ibrahim and Jaafar (2017:946) who investigated the benefits of work-integrated learning programs and found that self-management, interpersonal skills, self-learning and Although Wesley *et al.* (2017:95) regard self-management as a disposition, rather than a teachable skill, some subsets of self-management, such as time-management (Nawrot & Doucet, 2014:1081) and planning and self-control (Al-Smadi & Bani-Abduh, 2017:459) can be developed.

Teng *et al.* (2017:69) also refer to time-management as one of the most crucial self-management skills and found service-learning to be an excellent platform to develop time-management skills, while Delaney *et al.* (2017:2202) propose problem-based learning to develop time-management skills.

Another element of self-management that is receiving increasing attention as a skill that can be developed is the concept of “grit” as a self-management skill (Duckworth *et al.*, 2007:1098), which is closely related to self-control (Liu *et al.*, 2016:323). Grit is defined as the “tenacious pursuit of a dominant superordinate goal despite setbacks” (Duckworth *et al.*, 2007:1098), and has been positively associated with work and study success.

4.3.6.3 Measuring self-management skills

Al-Smadi and Bani-Abduh (2017:459) developed and validated a sixteen-item questionnaire that measures self-control and self-management skills. Arbaugh and Hwang (2015:1000) developed an instrument that measures group work skills, called the Groupwork Skills Questionnaire (GSQ), which included factors such as self-efficacy and interpersonal management. Dawson and Guare (2018:169) use an Executive Skills Questionnaire in which an array of self-management skills are measured. Some of the constructs appearing in this instrument, as well as some of the individual items used, are relevant to engaged learning and could be used in the design of a questionnaire for this study.

Liu *et al.* (2016:53) have developed a questionnaire to measure grit as a subset of self-management skill (Duckworth *et al.*, 2007:1097). Later four items were removed from the questionnaire. The Short Scale Grit (Grit-S) questionnaire measure grit on a validated two-factor twelve-item instrument (Datu *et al.*, 2016). Self-efficacy could be measured using Chesney’s Self

Efficacy Scale (CSES). The Work and Meaning Inventory (WAMI) measures meaningfulness of work as part of career-management skills. (Steger *et al.*, 2012:9).

4.3.7 Critical thinking

Critical thinking is a multifaceted construct and therefore, hard to define accurately (Stupple *et al.*, 2017:99). However, Forawi (2016:58) identify several elements which link to critical thinking skills. These include the ability to think independently, judgment, the resolve, re-address, and re-analysis of complex situations, evaluation, questioning, and arguments. From this list, it is evident that critical thinking is to a great extent linked to the ability to solve problems.

Elhakeem *et al.* (2017:736) define critical thinking as “reasonable reflective thinking focused on deciding what to believe or do”, and state that a critical thinker exhibits the following skills:

- Is open-minded and mindful of alternatives;
- is (or tries to be) well-informed;
- judges the credibility of sources;
- identifies reasons, assumptions, and conclusions;
- asks appropriate clarifying questions;
- judges well the quality of an argument, including its reasons, assumptions, evidence, and their degree of support for the conclusion;
- can well develop and defend a reasonable position regarding a belief or an action
- does justice to challenges doing justice to challenges;
- formulates plausible hypotheses;
- plans and conducts experiments well;
- defines terms in a way appropriate for the context;
- draws conclusions when warranted – but with caution; and
- integrates all of the above aspects of critical thinking.

4.3.7.1 Importance of critical thinking for MBA graduates

The evidence is overwhelming that critical thinking is positively correlated with most other generic skills that the market requires from MBA students (Desai *et al.*, 2016:29; McMurray *et al.*, 2016:130; Stupple *et al.*, 2017:99). Bycio and Allen (2009:7) have compared results in a critical thinking skills test with intelligence and academic performance of MBA students across business schools and found a strong positive correlation between critical thinking skills and academic performance.

4.3.7.2 Developing critical thinking skills

The effect of critical skills instruction has not been overwhelmingly positive. (Dilekli & Tezci, 2016:150; Gholami *et al.*, 2016:20; Heijltjes *et al.*, 2014:41; Howard *et al.*, 2015:146). The process involved in critical thinking encompasses core skills of analysis, evaluation and inference (Walker *et al.*, 2014:51), and these three core skills imply that teaching methods that involve active learning, such as simulation courseware (par. 3.3.6.3) (Arbaugh & Hwang, 2015:541), active classroom activities (Živković, 2016:107), and problem-based learning (par. 3.3.5) (Gholami *et al.*, 2016:20) are the most effective methods to develop critical thinking skills (Zohre *et al.*, 2014:101).

4.3.7.3 Measuring critical thinking skills

Measuring critical thinking is relatively challenging (Arbaugh & Hwang, 2015:868), because some tests that measure critical thinking skills, measure skills such as time management, which can be acquired over a very short period, and some measure critical thinking disposition, which is more of a way of thinking and takes longer to acquire.

The California Critical Thinking Skills Test (CCTST) is probably the most widely used validated series of tests for measuring critical thinking skills by asking specific multiple-choice questions that require critical thinking (Kong *et al.*, 2014:468; Kong, 2015:29). Each of the tests is made-to-fit for a specific level, from pre-school children to business executives. The CCTST has been proven to be reliable, with Cronbach's alpha values of above 0.71 for all the subscales of the instrument.

4.3.8 Cultural awareness

The original definition of the term "intelligence" has been expanded into other, critically important, forms of intelligence, such as emotional intelligence (García-Sancho *et al.*, 2017:45), practical intelligence (Prinsloo & Barrett, 2013:140) and spatial intelligence (González, 2017:5). A concept that gains increasing importance in the 21st century is "cultural intelligence" (Ang & Van Dyne, 2015:13), since a cognitive definition for cultural awareness skills.

The original definition of cultural intelligence the capability of an individual to function effectively in situations characterised by cultural diversity (Earley & Ang, 2003:7), since it entails the capability of an individual to function effectively in situations characterised by cultural diversity (Earley & Ang, 2003:7).

4.3.8.1 Importance of cultural awareness for MBA graduates

The increasingly global nature of business has necessitated a sensitivity towards other cultures, which was traditionally not necessary in homogenous societies (Andresen & Bergdolt, 2017:177). Although most research on cultural awareness focuses on race as a dividing factor (Atkins *et al.*, 2017:677; Spanierman *et al.*, 2017:644; Young *et al.*, 2017:40), developments such as the 2017 international migrant crisis, the increasing prevalence of expatriate workers and globalisation as a whole, has focused attention on cross-cultural competencies (Thomas & Inkson, 2017:40). MBA graduates are increasingly internationally mobile (Silvanto *et al.*, 2017:47), and need, therefore, to be culturally aware. Although cultural awareness in isolation is not the most highly-rated required skill of an MBA graduate, it forms part of the basis of some of the other skills, such as decision-making, problem-solving and communication (Ang *et al.*, 2007:368; Bücker *et al.*, 2014:2086; Engle & Delohery, 2016:11). Although cultural awareness was not amongst the 20 most prevalent skills in the ranking of MBA generic skills carried out between 2014 and 2016 (par 1.3), the ranking of skills deemed necessary in studies published since 2017, (par 4.2.7), showed that cultural awareness became one of the six most sought skills required by employers of MBA students. This could indicate a significant shift in the importance of cultural awareness as an important generic skill for MBA students.

4.3.8.2 Developing cultural awareness skills

Cultural awareness is the one skill that could be triggered by making people aware of cultural issues (Allard *et al.*, 2017:11; Fong *et al.*, 2016:93). The common theme emerging from research on developing cultural awareness is that cultural awareness is cultivated and developed by personal experience with diversity (Atkins *et al.*, 2017:694). One method to develop cultural awareness is studying abroad, and it also aids personal development in general (Black & Duhon, 2006:141). Experiential learning (Kurpis & Hunter, 2017:44; Shen, 2017b:21) and especially service-learning (Chao *et al.*, 2017:40; Coffey *et al.*, 2017:63; Dietz *et al.*, 2017:41; Liu & Lin, 2017:253; Taylor *et al.*, 2017:701; Wall, 2017:191) are also seen as valuable methods to develop cultural awareness.

4.3.8.3 Measuring cultural awareness skills

Various instruments have been developed to measure cultural awareness. The most common way of measuring cultural awareness is by measuring cultural intelligence with a validated instrument, called the Cultural Intelligence Scale or CQS (Ang & Van Dyne, 2015:40). This instrument consists of two options, a four-factor scale (20 items) and a two-factor scale (12 items).

Although this instrument has been validated in many settings, such as Saudi-Arabia (AL-Dossary, 2016:310) and India (Khan & Hasan, 2016:18), this validation does not seem to apply across countries (Schlägel & Sarstedt, 2016:647). Strasheim (2016:88) has expanded the CQS for validity in South Africa. Awang-Shuib *et al.* (2017:54) and Malone *et al.* (2016:235) have also developed and validated measuring instruments for cultural awareness. Elements from all these questionnaires could be valuable to include in an instrument to measure generic skills development of MBA students through the engaged learning strategy.

4.3.9 Evidence of skills developing through different 21st-century learning methodologies

From the discussion thus far, some links were discovered between the various methodologies described in chapter 3 and the different generic skills described in chapter 4. These links are summarised in Table 4-3.

Table 4-3 Links between teaching methods to generic skills

	Traditional	Experiential & Action learning	Service-learning	Work-Integrated learning	Problem-based learning	Games & Simulations	Classroom engagement	Flipped classroom	Reflective practice
Communication			X	X			X		
Teamwork		X	X	X	X				
Leadership			X	X					
Problem-solving	No	X	X	X	X	X	X		X
Decision-making	No	X		X	X				
Self-management		X	X	X				X	X
Critical thinking				X	X	X	X		X
Cultural awareness	X		X	X	X		X		

From the summary above, it is observed that the flipped classroom only relates to the development of one generic skill, namely self-management. In a study carried out in Switzerland Cieliebak and Frei (2016:1015) found that the flipped classroom per se did not influence the technical skills of students, but significant influence on the non-technical generic skills. Possible links between the flipped classroom and other methodologies would still be considered in a strategy for engaged learning.

4.3.10 The relationship between different generic skills

Eight relevant generic skills have been discussed in paragraph 4.3, ways to develop them were described, and instruments to measure them were reviewed. From this discussion, it is evident that these skills do not exist in isolation, but they complement each other. Neither can any one of these skills be developed without at least affecting, in part, one or more of the other skills. This poses two questions that need to be answered, namely a question of leverage (Which of these generic skills will, when developed, will have the most substantial spill-over effect on other attributes?) and a question of method (Which of the methodologies mentioned in chapter 3 would have the most substantial composite effect on the development of these generic skills?). These two questions will be briefly discussed below.

4.3.11 Possible causal relationships between these generic skills

Two generic skills that have a knock-on effect on other skills, are critical thinking and cultural awareness: Critical thinking is the foundation of many of the other generic skills, since it lies at the root of problem-solving, decision-making and cultural awareness (Bennett *et al.*, 2015:431; Choi *et al.*, 2014:55; Engle & Delohery, 2016:11; Gaither *et al.*, 2015:602; Hargrove & Nietfeld, 2015:316; Iyengar, 2015:12; Montag-Smit & Maertz Jr, 2017:9; Mumford *et al.*, 2017:37; Proctor & Brestan-Knight, 2016:81; Walker *et al.*, 2014:51; Zohre *et al.*, 2014:101) and it is a crucial skill to enable proper communication (Desai *et al.*, 2016:29; McMurray *et al.*, 2016:131; Stupple *et al.*, 2017:99). Similarly, cultural awareness is a key element of communication and problem-solving (Ang & Van Dyne, 2015:287; Bückner *et al.*, 2016:323), as well as on leadership (Fernandez *et al.*, 2015:351).

Problem-solving and decision-making are closely related, since the steps in the traditional problem-solving and decision-making processes are overlapping to a large degree (de Villiers *et al.*, 2016:2860; Katz-Buonincontro & Ghosh, 2014:139). Problem-solving is also one of the key skills necessary for teamwork (Hesse *et al.*, 2015:54; Klegeris *et al.*, 2017b:893), self-management (Hesse *et al.*, 2015:54) and leadership (Ebrahimi & Azmi, 2015:850). Decision-

making affects teamwork (Kaner, 2014:21; Pérez *et al.*, 2014:497; Xu & Wang, 2016:34}}, self-management (May *et al.*, 2014:667) and leadership (Hoyt & Price, 2015:537; Shapiro & Stefkovich, 2016; Smith, 2014:1620).

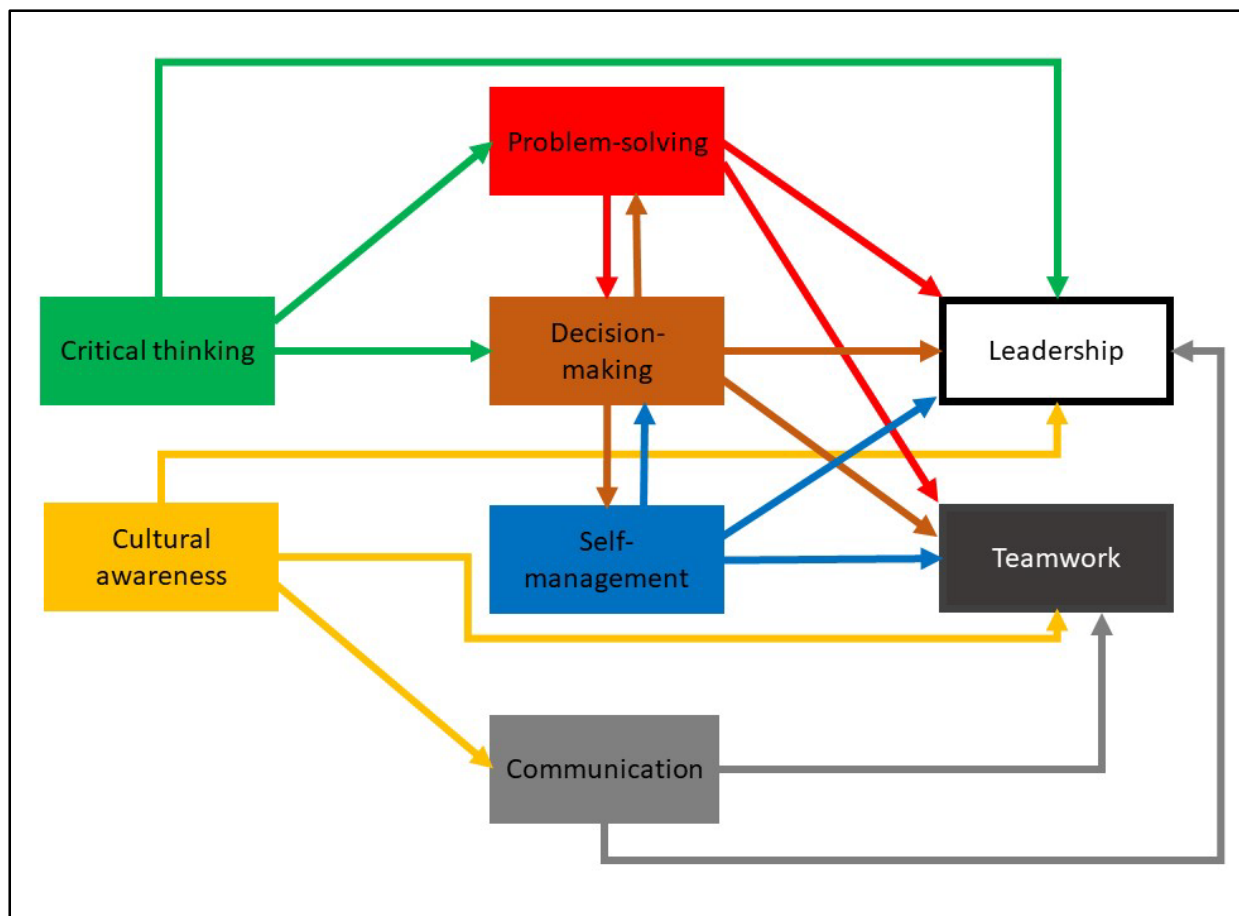
Self-management is a broadly defined construct, and there is considerable evidence of its influence on decision-making (Harasym *et al.*, 2013:528; Hoyt & Price, 2015:538; May *et al.*, 2014:667; McVea, 2009:503; Sheehan & Schmidt, 2015:195; Winston & Bahnaman, 2008:229), teamwork (Arbaugh & Hwang, 2015:999) and leadership (Ebrahimi & Azmi, 2015:851; Fernandez *et al.*, 2015:351).

Communication skills are closely associated with leadership (Ebrahimi & Azmi, 2015:850) problem-solving (Hesse *et al.*, 2015:54) and teamwork (Carter *et al.*, 2016:390; Hastie *et al.*, 2014:221; Mitchell *et al.*, 2010:383; Parratt *et al.*, 2016:84; Schreiber & Valle, 2013:408).

Finally, leadership is probably the generic skill most closely linked to all other skills, but in terms of skills development, the link is mainly that people's leadership ability is affected by their ability to communicate (Ebrahimi & Azmi, 2015:850), manage themselves (Fernandez *et al.*, 2015:351), make decisions (Hoyt & Price, 2015:538), work in teams (Cooper *et al.*, 2016:99; Cotterill, 2017:24; Frich *et al.*, 2015:672; Jacobs *et al.*, 2017:71-74; Vohra *et al.*, 2015:25). The inverse link between leadership and other generic skills is that good leaders will develop the skills in their followers, but this is not a causal relationship between the leadership skills of those being developed and their generic skills (Baron, 2016:309; Gurdjian *et al.*, 2014:125; Mehrabani & Mohamad, 2015:850; Mumford *et al.*, 2017:37).

These abovementioned relationships are, therefore summarised in Figure 4-5, where arrows indicate a contributing relationship between any specific skill and its derivative skill.

Figure 4-5 Relationship between selected skills



Source: Summary of facts mentioned in paragraph 4.3.

The suggested causal relationship between the different generic skills made it possible to omit some skills from the questionnaire, but to possibly measure one skill by measuring the skill that depends on that specific skill.

4.4 Chapter conclusion

Using any specific teaching strategy could affect a plethora of different generic skills. From the work of previous scholars on those generic skills that are needed of an MBA graduate, there is reasonable agreement about which are the essential skills that an MBA programme should develop. With time the list of desired skills is gradually changing with a changing global environment.

Topping the list of skills that prevail on the list of required skills are communication and teamwork, but problem-solving and leadership are also consistently regarded as necessary. Over the last three years, there has been a slight shift in ranking from decision-making and self-management towards critical thinking and cultural awareness. Advances in technology and the global political and economic environment could be responsible for this shift, but further research would be necessary to establish the actual reasons behind this shift.

To get a balanced view of the development of these generic skills in students during a specific intervention, measuring problem-solving, communication, teamwork and self-management skills should provide a relatively complete picture, but due to its rapid increase in importance, cultural awareness should also be tested. These are included in an instrument to gauge generic skills development as a result of the strategy for engaged learning.

This chapter addresses the skills that should develop through a strategy for engaged learning. In this chapter, the third secondary objective of this study is addressed, namely, to identify those generic skills required of MBA graduates that could be developed through an engaged learning strategy.

4.5 Chapter summary

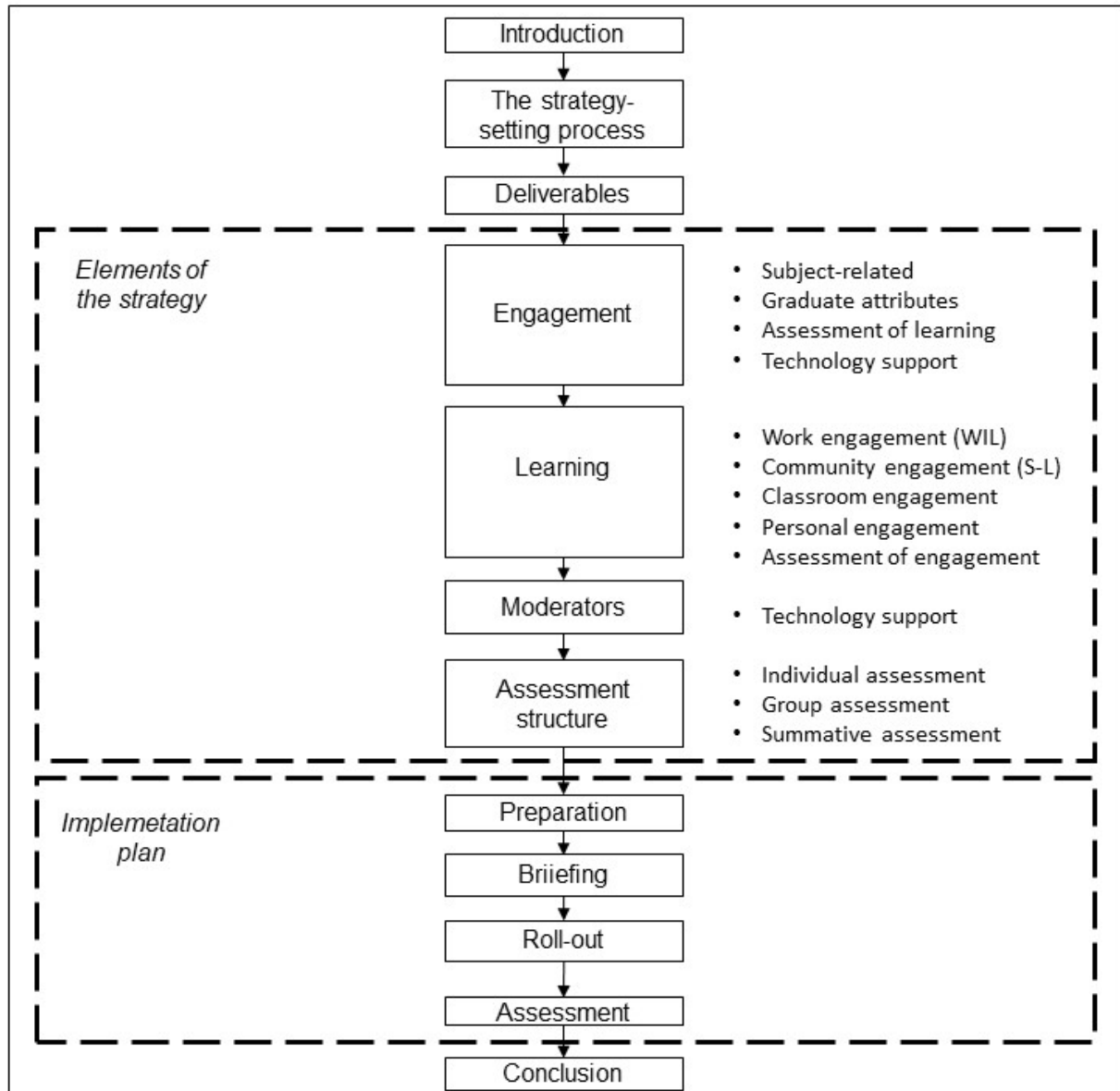
In this chapter, a distinction was made between the often interchanged definitions of generic skills, employability skills and pervasive, soft or generic skills. Recent research on the relative importance of generic skills for MBA students is described, and a selection of eight generic skills was made that are deemed the vital skills that an engaged learning strategy could develop. These eight skills were discussed, including the importance of each for MBA graduates, ways of developing each skill and instruments that could measure the level of the skill exhibited. Evidence of the development of all eight these skills through 21st-century learning methodologies is summarised, and possible causal relationships between these skills were identified.

CHAPTER 5

THE ENGAGED LEARNING STRATEGY

5.1 Introduction

Figure 5-1 Structure of Chapter 5



In the previous chapters, the theoretical foundations of a strategy for engaged learning were described. The essence of learning was described in detail in Chapter 2 by describing different epistemologies and the learning theories included in each, followed by the elements of each of

these theories that should be included in a strategy for engaged learning. This was followed by a description in chapter 3 of the most common 21st-century learning methodologies, in which the implication of each of these methodologies on engaged learning was elucidated. In chapter 4, the content of the learning was analysed by detailing the most common generic skills required of an MBA graduate.

In chapter 5, the strategy for engaged learning is described. The chapter starts with a brief theoretical section on the stages in setting a strategy, followed by a brief review of what the deliverables of the strategy are, the stages of implementing the strategy for engaged learning, and the elements that are included in the strategy. The chapter concludes with an overview of the implementation plan.

Measuring the success of the strategy is not included in this chapter, because it is described in detail in chapters 6 and 7, including the design of measuring instruments.

Since the strategy is applicable to an MBA programme, the strategy for engaged learning needs to be relevant to MBA students' learning needs and their environment, taking into account the typical constraints relevant to MBA students. The following environmental assumptions are, therefore, foundational to this strategy:

- MBA students are adults, and learning takes place according to the assumptions of andragogy.
- Part-time MBA students are full-time employed and study part-time.
- The constraints that MBA students experience, as described in paragraph 8.3, apply.
- There is a properly functional learning management system (LMS), supporting the students in their learning. All students have Internet capabilities to access this system. If there are exceptions, these are not addressed in this strategy, but such exceptions should be managed individually, based on the technology available at the institution.
- The roll-out of the strategy for engaged learning, including elements such as group work and portfolio assessment are allowed by the institution considering implementing engaged learning as a learning strategy and by authorities where the MBA programme is accredited.

The strategy given below is described for an institution where the above assumptions hold.

5.2 The strategy-setting process

A strategy is a plan to get an organisation from where it is to where it wants to be (Letaifa, 2015:1418). Tavakoli *et al.* (2015:11) list the stages in the strategy-setting process model as:

- Formulation: During this stage, preparations for the planning of the strategy are executed, and include setting up the strategy and analysing the strategy. Also included in this phase is the development of the strategy, which consists of generating ideas, decision-making and synthesising.
- Implementation: During this stage, the strategy is implemented to determine the feasibility of the strategy. This stage was executed during the intervention (chapter 6) and consists of communicating and operationalising.
- Evaluation: During this stage, the formulation and implementation are reflected upon to determine areas where remediation is needed.

New strategies are usually necessitated by present or anticipated changes in the environment (Saebi, 2014:33). The basic stages in the strategic process differ slightly between organisations in the private sector and those in the public sector (Malekpour *et al.*, 2015:74), and the boundaries between stages in this strategic process are not always clearly defined. Leonardi (2015:520) suggests that the distinction between the strategy formulation stage and the implementation stage should fade.

In the private sector, the stages of the strategic process are listed as formulating the strategy, implementing the strategy and evaluating the strategy (Johnson *et al.*, 2017:374), which then becomes an iterative process. The critical stage, which is where most organisations fail, is the implementation, or execution, stage (Sull *et al.*, 2015:58). Rosemann and vom Brocke (2015:119) refer to the implementation stage as a “roadmap”. The final stage in the strategic process is evaluation, to which Wolf and Floyd (2017:1786) refer as “reflectivity”, where management reflects on the success of the strategy.

In the public sector, the two critical stages are described as formulation and implementation, but measuring success is also regarded as critically important (Bryson, 2018:21). The last stage, measuring results, is the one most often neglected (Brinkerhoff *et al.*, 2015:230). The main factor that distinguishes strategy formulation between the private and public sectors is the higher level of political influence in the public sector, which should be included in the analysis stage of the strategy.

In summary, the strategic process could be reduced to three not-so-distinct stages: Strategy formulation, strategy implementation, and strategy evaluation (Dedy *et al.*, 2016:940). The remainder of this chapter deals with the first two stages (formulation and implementation), while the next two chapters deal with the third stage (evaluation).

5.3 Formulation

Formulating a strategy for engaged learning entails the consideration of all the different aspects, which might impact on the successful execution of the strategy. In this regard, various deliverables should be considered, against which the success of a strategy for engaged learning in an MBA programme, must be evaluated.

5.3.1 Deliverables of a strategy for engaged learning

The first deliverable is that the strategy must be suitable for a part-time, face-to-face MBA programme. The nature of such an MBA programme is unique in that it deals with working adults, of which the learning principles have been described in the section about andragogy in paragraph 2.3.1. These adults are mostly goal-driven, time-constrained, working people that are juggling work, family, studying and community issues in their lives.

The second deliverable is that the strategy should enable real learning, not just subject-related learning, but the acquisition of generic skills. In evaluating the strategy in any specific environment, it is vital to have an instrument that measures not just the level of subject-related learning that took place (or that did not take place), but also measures the extent to which generic skills are developed through such a strategy. Furthermore, learning needs to be internalised by having an impact. An instrument to gauge the subject-related learning that takes place is given in part B of Attachment 3. The principles of learning, as described in chapter 2, must be addressed in the strategy.

An equally essential third deliverable is that the strategy must be based on engagement in the classroom, as well as engagement in general. Based on the analysis of relevant 21st-century learning methodologies as described in chapter 3, engagement could include engagement in the community, engagement in the workplace, and any other relevant form of engagement.

The final deliverable is that the strategy must be practically implementable within the confines of a single MBA course over a single semester (the time that any specific lecturer usually interacts

with his or her students). It must therefore not be aimed at the institutional or curriculum level, but at the course level.

Apart from the deliverables, the inclusion of other important elements to be included in a strategy for engaged learning needs to be considered during the formulation stage.

5.3.2 Elements to be included in a strategy for engaged learning

The most dominant elements of the strategy for engaged learning have been derived from Figure 4-2, where the development of generic skills are seen as the results of the inputs from three spheres, namely work & career, society & community and academia. If the goal of engaged learning is to develop generic skills, engagement should happen in the workplace, in the community and the classroom. Also, the strategy should include learning from the workplace, from community-based involvement and the classroom. The four engagement elements that are therefore included in the strategy are in order of decreasing external focus: service-learning (representing community engagement), work-integrated learning (representing workplace engagement), classroom engagement and personal engagement. Since an engaged learning strategy is limited to smaller classes, as described in paragraph 8.3, it is possible to engage with the students on an individual level too. Classroom engagement could be sub-divided into two categories: learning through engaging class activities/teaching, and personal engagement.

Each of these elements is discussed in detail below, under the following headings: Learning elements, engagement elements and assessment strategies.

From Table 2-1, the following learning elements from the different epistemic viewpoints appear to be the most important towards engaged learning, and should be included in the strategy (*practices from each epistemology are given in italics*):

- Andragogy: *Use their environment; independent work; take them to their area of experience; provide context and integrate; be aware of individual differences.*
- Objectivist: Theory should support practical application; Keep the bigger picture in mind; challenge everything. (*Dialogue; group discussions, integrate with other knowledge*).
- Behaviourist: Create an environment conducive to learning. (*Take them from the classroom to the real world*).
- Cognitivist: Encourage problem-solving, decision-making and critical thinking; tap into their experience; provide learning scaffolding; focus on generic skills. (*Provide a support network; use experiential learning, use group work*).

- Constructivist: Knowledge should be constructed by students, not just shared; reflection; leave time for spontaneous interactions; group work creates knowledge. (*Community engagement, workplace application of knowledge; reflection; group work; let them present learning points; use debates*).
- Connectivist: Ensure that the “dots are connected”; capture knowledge using technology. (*Use of technology; real-time feedback; VERY recent knowledge; use the LMS*).

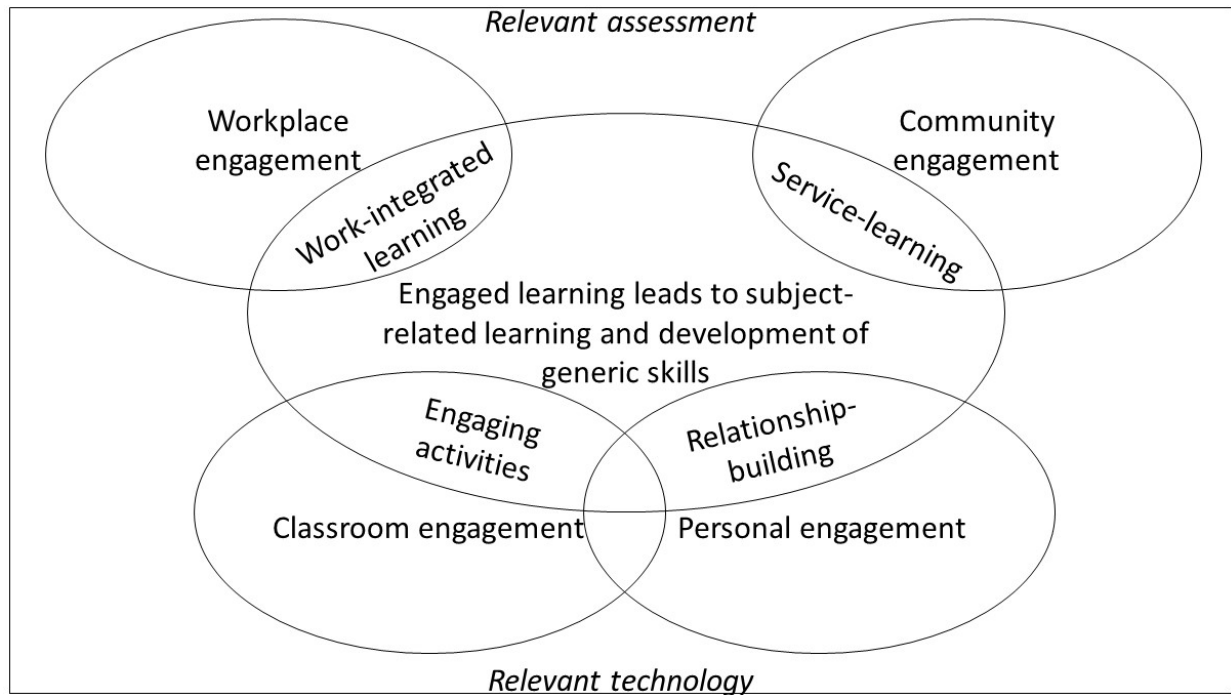
From Table 3-1, the following 21st-century learning methodologies could feature as part of the strategy for engaged learning (in decreasing order of appeal):

- experiential learning, through other methodologies;
- service-learning;
- work-integrated learning;
- classroom engagement activities;
- problem-based learning, in combination with other methods;
- games and simulations;
- the flipped classroom, but only to support other strategies;
- reflective practice, supporting other strategies; and
- use of technology, supporting other strategies.

From this it follows that the core pillars of a strategy for engaged learning should be service-learning, work-integrated learning and classroom engagement strategies, supported by reflective practice, the flipped classroom approach, use of relevant technology and appropriate assessment strategies.

As such, the generic skills model proposed by the University of Edinburgh, as shown in Figure 4-2, can be adapted to the model, depicted in Figure 5-2.

Figure 5-2: Adapted generic skills model



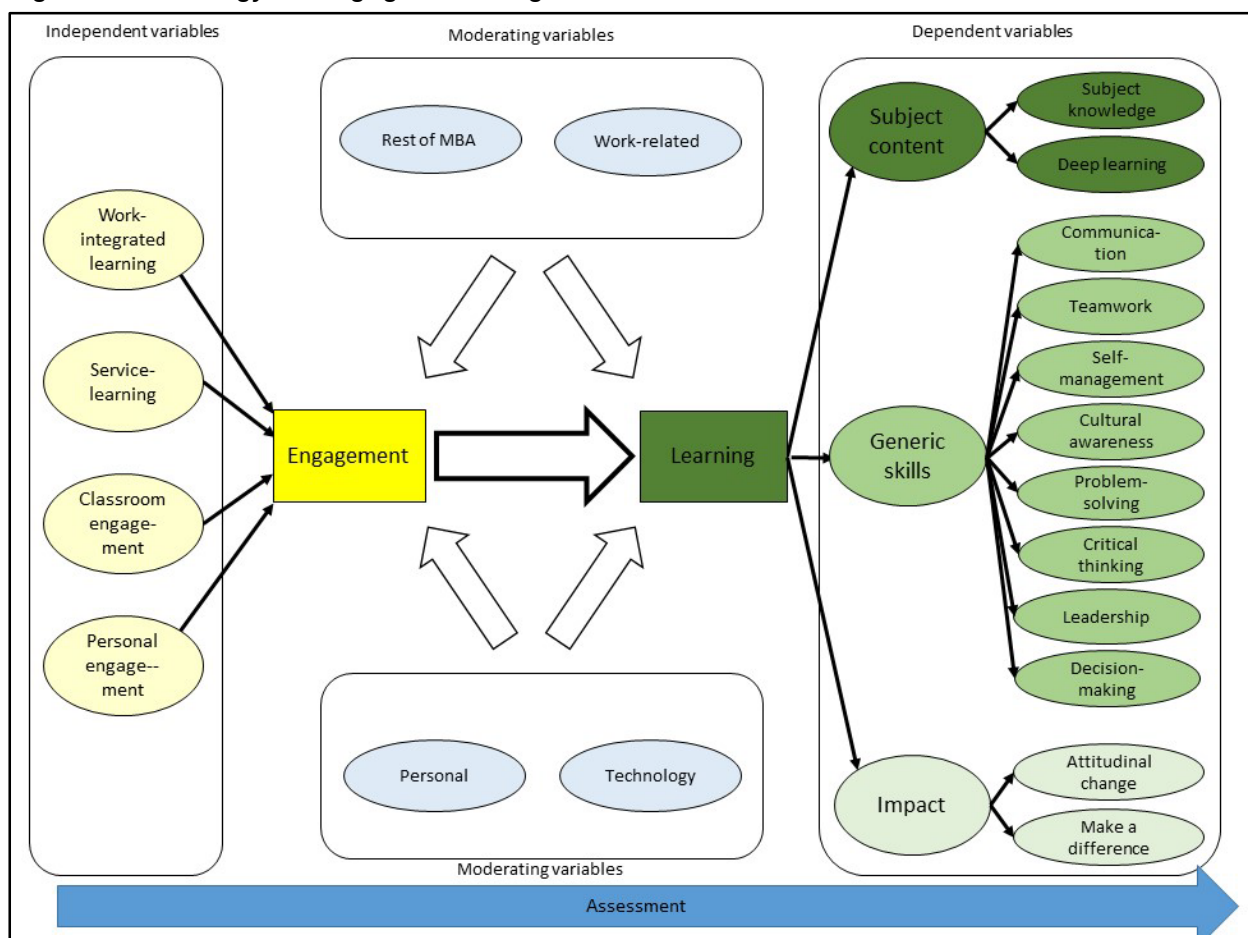
Source: Adapted from McCabe (2010:2)

This model shows all the elements that are to be included in the strategy for engaged learning in an MBA programme. Workplace engagement is included through work-integrated learning, community engagement is included through service-learning, classroom engagement is included by including relevant classroom activities, and personal engagement is included by using different methods to build relationships with and between students. There is an overlap between classroom engagement and personal engagement. These are all supported by relevant technology and appropriate assessment strategies. The learning that is enabled by these should lead to the development of specific generic skills.

In summary, the strategy for engaged learning entails the following. Engagement, as the distinguishing element of the strategy, takes place on four fronts: Workplace engagement (work-integrated learning), community engagement (service-learning) classroom engagement (including simulations and games) and personal engagement (metacognition and reflection) The strategy also needs to address variables unique to an MBA programme, that could moderate its success.

In terms of the deliverables of engaged learning, the two most obvious ones are subject learning and development of selected generic skills. However, there are also some other benefits that have been proven to ensue from the four elements of the strategy mentioned above, and these must somehow be included in how the strategy's success gets measured. Hence, the third deliverable should, therefore, be that it must make an impact. Finally, assessment is an inherent part of any learning strategy, and elements of assessment form part of every variable included in the strategy. Based on the theoretical evidence in chapters 2 to 4 and the abovementioned requirements, the proposed strategy would, therefore, resemble the diagram, shown in **Error! Reference source not found.** below.

Figure 5-3: Strategy for engaged learning

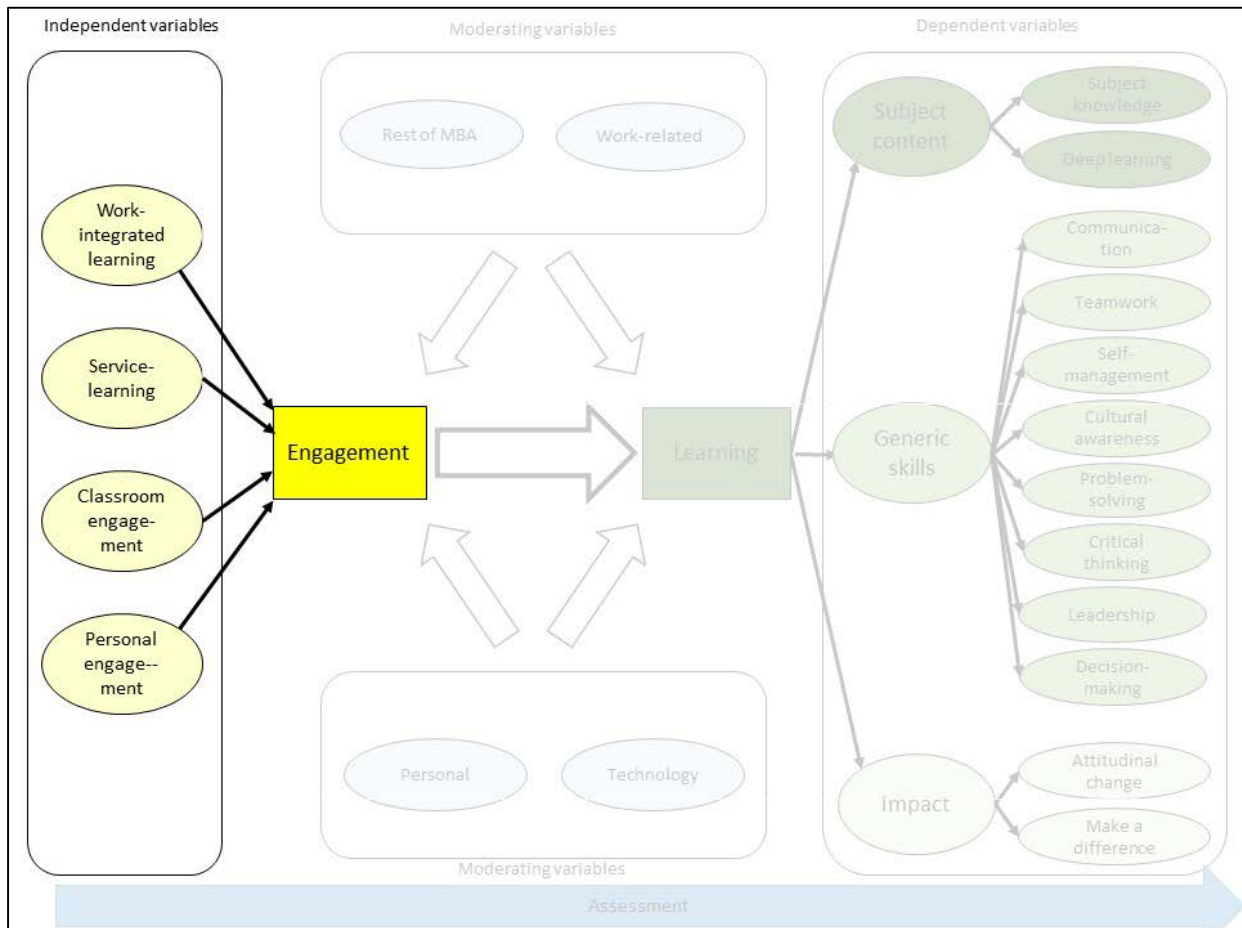


The individual elements, as depicted in the strategy for engaged learning shown in Figure 5-3, are discussed below.

5.3.3 Engagement elements (independent variables)

Since the strategy for engaged learning focuses on engagement to enable learning, the major engagement elements form the backbone of the strategy.

Figure 5-4: Independent variables



5.3.3.1 Work engagement (work-integrated learning, or WIL)

Engagement in the workplace is achieved by an “individual project” that is based on the principles of work-integrated learning, as described in paragraph 3.3.4. A significant portion of the teaching strategy revolves around work-integrated learning. The project is selected to represent high-level WIL (very authentic and very proximal), as described in Figure 3-4. Since students are full-time employed, this is carried out at their place of work. However, there are some individual cases where students are allowed to select an external organisation, although this is discouraged. Examples are students that are presently unemployed or students that are working for an organisation where information is not allowed to leave the organisation, such as an organisation that is involved in a takeover, organisations that are part of a high-security industry or

organisations where the political climate is such that asking questions would endanger a student's career. The remainder of this discussion will not revolve around the individual cases, since the procedure for students selecting an external organisation is identical to the standard cases.

For every contact, session students are required to go through the content using the flipped classroom approach, as described in paragraph 3.3.8. Three days before the contact session students must submit a one-page summary of each topic (textbook chapter) covered in that contact session, plus a one-page analysis of how that issue is applied in the organisation, plus a one-page recommendation on how this issue could be improved. A template is supplied to students on the LMS for this submission. The template is given in Attachment 7. If more than one topic is covered in a specific contact session, students are allowed to do the analysis and recommendation on only one of the topics, for the sake of their time management. Also for the sake of accommodating students' time constraints, they are only required to submit two of these assignments during the semester, but if they submit more than two, all of them are marked, and the assignment where they perform worst is not taken into account for official assessment purposes. Students can decide which contact sessions they prefer to submit a complete assignment for. For the remaining contact sessions (all contact sessions where they do not submit a complete assignment), students must still submit a one-page summary of each chapter. This submission is to ensure that they go through the content and are prepared for classroom discussions and classroom activities.

After each submission, students receive individualised voice feedback, as described in paragraph 5.3.5. The sum of all these submissions counts towards the individual portion of their participation mark that is necessary to earn access to the examination (which, in this strategy, is replaced by a portfolio of evidence, as discussed in paragraph 5.3.6.2).

Assessment of the individual WIL project entails formal assignments, blended into a 50/50 division between individual and group submissions. This practice is relatively standard in MBA programs, as explained by Alexander (2016:340), but is also enforced by the institution where the research is carried out. If the strategy is employed at a business school where a mixture of group and individual assessment is not standard practice, it should be negotiated with school management to include this in the official assessment as a vital element of engaged learning. If not, it could still be an element of the informal assessment of engaged learning.

It should be noted that the flipped approach forms a supporting part of a strategy for engaged learning, so that the class discussions could become valuable learning experiences instead of merely instructivist sharing of information. The "flipped approach" implies that students must cover

the theory before the start of the session, and class time is dedicated to adding additional value. Assessment serves more than one purpose in this regard. It assesses the mere acquisition of subject-related knowledge, it assesses whether deep learning is taking place, it motivates the students to prepare for class, and it assists the lecturer in deciding which voids in students' knowledge to address during the lesson. In practice, it is found that, if a lecturer wants students (even MBA students) to do some form of work, they must submit it for grades.

The essence of the WIL portion of the learning is that the information must not just be mastered in theory, but applied at the students' place of work ("the organisation"). It entails more than a once-off assignment, but a continuous analysis of the application of the theory at the organisation. It is presumed that the semester is divided into a number of contact sessions. If it is not, such as a block release method of delivery, the content could still be divided into "contact sessions", and submissions could still be spread throughout a semester. This arrangement would also promote consistent work instead of last-minute studying.

5.3.3.2 Community engagement (service-learning)

Service-learning, as described in paragraph 3.3.3, is a derivative of experiential learning, described in paragraph 3.3.1, directly linking learning with community engagement. The learning benefits of service-learning have been described in detail in paragraph 3.3.3. Therefore, a community engagement (service-learning) project is an integral part of a strategy for engaged learning in an MBA programme. Since service-learning is almost always group-based, in an MBA group, a service-learning project should be group-based, preferably in syndicate groups, and will be assessed as a group assignment, as described in paragraph 5.3.3.2.

The design of the service-learning project could be adapted to the environment where this strategy is employed, but in the developing country where this strategy is tested, the project needs to follow a specific design as described below.

The purpose of the project should be explained to students at the beginning of the semester: "Go and apply what you have learnt in this course at a community organisation of your choice and report back the difference that you have made." At the beginning of the semester, the project is launched at a formal session, where each syndicate group selects a community organisation (a non-profit organisation), based on strict requirements:

- It must be within a geographical area where most of the syndicate group members can access it;

- it must have a community cause (its primary cause, which is often funded by donations or by the government);
- it must have some business venture operating in parallel to the community cause (so that the MBA business principles could be applied in the organisation);
- it needs to have at least ten people involved in managing it, whether full-time or part-time, permanent or volunteers; and
- it needs to be willing to co-manage the project with the MBA students.

These requirements are given as checklists in Attachment 8. The organisation is then supplied with a formal letter from the lecturer with a registration form, (Attachment 10), as well as an undertaking by the organisation to at least allow the students to complete the project until the end of the semester. This completed form also provides written informed consent for the project to proceed.

Students then have two weeks to share the project with the community organisation and negotiate their involvement with the representatives of the organisation. At the first contact session, representatives of the organisations are invited for a workshop, where the purpose of the project is shared with them and where they are requested to challenge the students and help students taking part in the project to develop generic skills (Adshead, 2015:18).

Before every contact session, each syndicate group must share the information covered in that contact session with the community organisation on a level that the management of the organisation can understand. The process of translating academic content into layman's terms is regarded as part of the process of making sense of the learning content (Sörensen, 2015:16). The syndicate group must also find out to what extent this knowledge would address a problem or issue that the community organisation needs to be addressed, propose a solution and help the organisation to practically implement the solution during the semester. One of the main benefits of service-learning, as described in paragraph 3.3.3, is that physically getting involved in the project is one of the significant growth opportunities resulting from service learning projects. These must be submitted as a PowerPoint presentation to be presented during class.

With the assessment of the community project, the same principle applies as to those applicable to the individual WIL project, in that all work that is submitted must be graded and contributes towards the final pass mark.

The group project, as described in paragraph 5.3.3.2, is assessed on three levels, all three counting an equal portion of the marks.

- Before every contact session, students must make contact with the community organisation and determine their need in terms of the topics being covered during that contact session. Each group then chooses one (or if they prefer, more than one) topic and one member of the group submits a four-slide PowerPoint presentation via the LMS, consisting of a cover page, where the details of the organisation, their community work and their business leg are given. The second slide is a one-page summary of the theory in a language that the organisation can understand, the third is an analysis of how this issue is managed at/by the organisation and the final slide contains recommendations on how this element could be improved at the community organisation, either in the community leg or in the business leg. This submission also contributes to the development of the students' communication skills (writing and presenting) and is graded before the contact session, based on a rubric provided in Attachment 11. The person who submits the PowerPoint presentation receives the audio feedback via the LMS to distribute to his/her group. To accommodate the time constraints of MBA students, they are allowed to only submit two of these during the course of the semester. If they submit more than two, all are marked, and only two best marks contribute towards the final mark. The total of these marks adds up to one-third of the final group portion of the participation mark.
- At the end of the semester, each group gets to present a peer-assessed presentation to the rest of the class, convincing them of (i) the subject-related principles applied at the organisation, (ii) the value added to the organisation, and (iii) the learning that the group experienced during the project. The assessment rubric for this submission is given in Attachment 11. The presentation counts one third towards the group portion of the final participation mark.
- At the end of the semester, each group submits a portfolio, showing how the project was executed. This portfolio differs from the class presentation, in that it includes (i) a description of the actual work done, (ii) a photo journal of the project (unlimited length), (iii) a testimonial(s) by the community organisation and (iv) a reflection report by the whole group capturing the personal development achieved during the project. The portfolio counts one-third towards the group portion of the participation mark. The assessment rubric for this submission is given in Attachment 11.

It should be noted that the needs of different community organisations differ considerably, and therefore, it is impossible to apply everything that is learnt in class to the organisation, since their needs are often limited. Therefore, if a community engagement project manages to address one or more needs of a community organisation, it is regarded as a successful project.

5.3.3.3 Classroom engagement

The third independent variable pertaining to engagement entails classroom engagement activities. In this regard, the following, amongst others, could be considered:

5.3.3.3.1 Entertaining student questions and requests.

As described in paragraph 5.3.4.1, students need to submit a summary of each topic's theory three days before a contact session, based on a template provided to them. On the template, as shown in Attachment 7, there is a question "What do you want to be clarified in class?" Before the lesson starts, these are all summarised by the lecturer and the theoretical portion of the lecture is based on students' inputs. The feedback to students is either handled in the individual audio feedback or added to the PowerPoint slides for that specific contact session, depending on how many people have requested a specific issue to be addressed. An analysis of the effectiveness of this issue is given in chapter 7, in paragraph 7.4.2.13.

5.3.3.3.2 Games and simulations

Since the experience levels of MBA students are diverse, extensive use is made of games and simulations to bridge possible gaps in knowledge or skills. Based on the theoretical evidence, as described in paragraph 3.3.6, any game or simulation should be selected if the following requirements are met:

- It must address the key learning point of that lesson;
- it must not take up more than 25% of the time allocated to that topic;
- it must be understandable for all participants;
- it must be fun; and
- a class discussion must follow the activity to reflect on the learning points.

In some cases, the simulations could be presented in the form of a competition between syndicate groups, with a prize given to the best-performing group. An analysis of the effectiveness of this is given in chapter 7, in paragraph 7.4.2.13.

5.3.3.3.3 Songs, rhymes and music

The use of songs and music is a novel way to convey the key message of a lesson. Examples of the use of music or rhyme in an engaged learning strategy are.

- Dividing the students into groups, or their syndicate groups, and let each group compile a song or poem that captures the essence of the topic being discussed. Such discussions help develop communication skills. In essence, this is a novel way of encouraging reflection. Volunteers are invited to perform their attempts to the whole class. This performance could take the form of a competition, where the best group receives a prize (a typical behaviourist reward). Rewards should be given to any group that performs their entry in front of the class.
- The lecturer makes up a song, preferably using a well-known, simple tune, capturing the main learning point(s) of the lesson, and then invites students to sing along to ensure they remember the main learning point.
- Playing music with a distinct learning point relevant to the content being taught on a video or in the song.

An analysis of the effectiveness of this issue is given in chapter 7, in paragraph 7.4.2.13.

5.3.3.3.4 Relevant videos

The excessive use of videos in class is generally discouraged, as found by Soffer and Nachmias (2018:9) and described in paragraph 3.3.7. Where it is necessary to emphasise key points or to take the class into an environment where they would not necessarily be able to go (such as a factory scene), the use of appropriate videos add considerable value, as found in chapter 7, paragraph 7.4.2.13. Videos being shown must conform to the following:

- It must not take a disproportionate time to view, relative to the value being extracted.
- It must address the key point of the lesson.
- It must be followed by a classroom discussion to reflect on the learning points.
- Ethical issues, such as copyright, should be observed.

5.3.3.3.5 Student tours and plant visits

Arranging business visits or student tours is a time-consuming, but worthwhile activity. Student tours (local or overseas) or visits to businesses where subject-relevant operations are taking place, could add considerable value, provided the following requirements are met:

- Groups cannot be too large, as it becomes logistically impractical: Groups larger than 25 people are generally unmanageable when taking a business tour, having a group discussion or arranging transport and accommodation.

- If a tour is such that students have to pay to go along, students should share their experiences and learning points with others in a formal feedback session upon return.
- Proper reflection on the activities should be done, focusing on the key learning points. This sharing and reflection could be a separate session, or it could be combined with the session where the learning points are shared with other students.

5.3.3.3.6 Industry group discussions

Since MBA students generally come from an array of industries, it adds value to let students discuss specific learning points with peers from the same type of industry. Alternatively, if a learning point needs to be compared or contrasted between industries, groups could deliberately be made up of students selected from different industries. Requirements for fruitful industry-related group discussions are:

- It must be well planned, so that the organising of industry groups does not disrupt the learning experience.
- The discussion questions must be well thought through to ensure that the discussions are sensible.
- The key point of the lesson needs to be addressed.
- A class debriefing/reflection should follow the discussion.

An analysis of the effectiveness of this issue is given in chapter 7, in paragraph 7.4.2.13.

5.3.3.3.7 Dress code

An interesting engagement method is that the lecturer could be wearing different t-shirts, one per lesson, with the main point of the lesson printed on them:

- If the curriculum is presented in different colours, it could be colour-coded, with the colour of the shirt for every lesson corresponding to the colour represented by that lesson on the graphical portrayal of the syllabus.
- It could contain a cartoon, summarising the key point of that lesson.
- It could contain a simple question or keyword to be discussed during that lesson. Wearing a few shirts over each other with such questions could be a valuable way to guide the class discussion through different issues.

An analysis of the effectiveness of this issue is given in chapter 7, in paragraph 7.4.2.13.

5.3.3.3.8 Individual and group assignment discussions

For each topic, one group assignment and one individual assignment is included in the lesson, presented by the person who submitted it. The people who are presenting are informed one day before the contact session that they have to present their submissions to the class. In the case where a student presents an individual (WIL) submission, and the student or organisation has requested a pseudonym to be used to protect the identity of the company, the pseudonym is used for this presentation instead of the real name of the company. This submission is then used as the basis of a class discussion or question-and-answer session.

Since classroom and personal engagement activities are designed to contribute to learning, the indirect benefit of these activities should show in the academic performance of students, although a direct quantitative link cannot be established in real-time. A qualitative method of assessment is, therefore achieved through the use of the reflective log completed by students at the end of each contact session. Since activities are introduced one by one, it is easy to capture the benefits of each activity by asking specific questions on the template for the reflective log of the session where that element is first introduced.

An analysis of the effectiveness of this issue is given in chapter 7, in paragraph 7.4.2.13.

5.3.3.4 Personal engagement

In the age of social media, the need for personal engagement is increasing (Purvis *et al.*, 1997:4). To elicit classroom engagement, it was therefore deemed vital to include some elements of personal engagement that would assist with classroom engagement.

5.3.3.4.1 Getting to know the students

If classroom activities are to be genuinely interactive, it is essential for the lecturer to get to know the students, which also accelerates students getting to know each other, which is beneficial for truly engaging classroom activities (Nilson, 2016:130). From academic records, make sure that class lists do not only contain student numbers, initials and surnames, but details are as complete as possible, including first names, mobile phone numbers, e-mail addresses and any other relevant data that could be obtained. Other methods that could be employed are that students could supply their own photos, students could supply their Facebook addresses and photos could be obtained from their profiles, or that student photos could be taken during class and linked with

their names. (Al-Bahrani *et al.*, 2016:21). In essence, an optimal way to obtain personal information from students is to let them supply it (Baeten *et al.*, 2016:60). This could be done on one of the reflection forms, as seen in Attachment 7. Another method to get to know students, employed during this intervention, was that the template on which students submit their individual assignment has a section where students could supply the name of their workplace (and a pseudonym if they do not want the name mentioned during class discussions) as well as a description of the nature of the organisation (Staats, 2016:30). Attachment 4 shows an example of such a template.

5.3.3.4.2 Communication with students

An essential element of engaged learning is to be available for students (Heflin *et al.*, 2017:98; Richardson *et al.*, 2016:98) With the age of mobile phones and e-mails, students expect lecturers to be always available. Availability of lecturers needs to be carefully managed, especially in larger classes (McKnight *et al.*, 2016:208). Availability of the lecturer could be accomplished in more than one ways.

- Mobile phone: Although it is often not standard practice for lecturers to share their mobile phone numbers with students, a mobile phone number used only for students can be supplied to all students, with the instruction that this phone is working during office hours. This number is then used for phone calls to and from students and WhatsApp communication.
- E-mail: On the LMS the e-mail address is available to students and is repeated on the first slide of any PowerPoint presentation used during the semester. At the beginning of the semester, the prerequisites for e-mails must be communicated with students (in writing), including what kind of e-mails are entertained and what kind would be ignored.

5.3.3.4.3 Dedication

In some environments, the custom to open with some form of dedication, such as Scripture reading and prayer, is standard practice. This practice does add value, and it aids sharing a spiritual connection between lecturer and students, provided the following conditions are met:

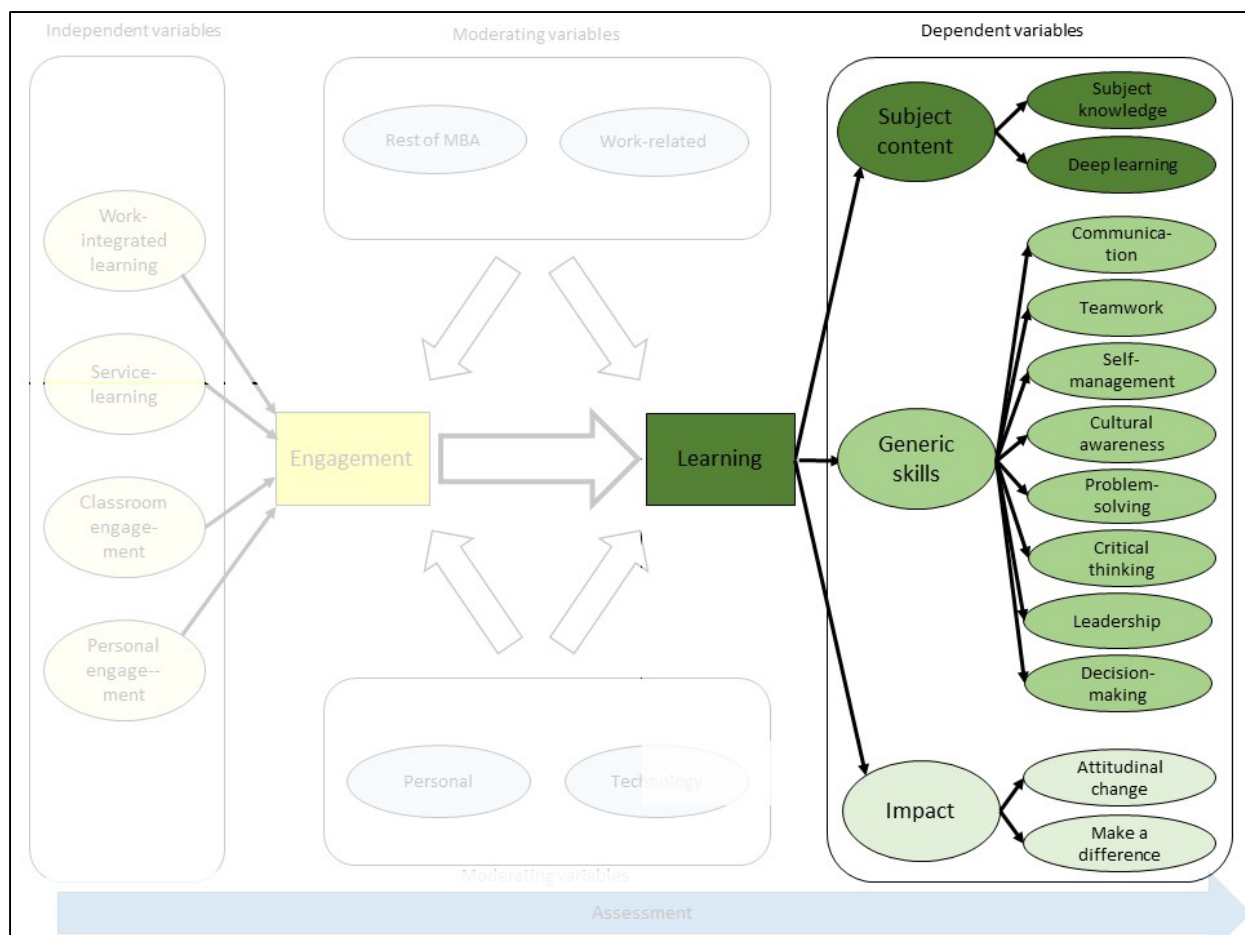
- It needs to be cleared with the class, especially if the group is diverse in terms of religious backgrounds.
- The motivation for opening with dedication must be shared with the students before it is done.

- Any objections should be handled pro-actively. Allow for people who do not want to participate and clear it with them beforehand.
- If possible, try and select topics (such as relevant parts of Scripture) that relates to some topic that is current at the time, or to the topic being discussed. (An example is reading the story of Noah and the ark when the topic of project management is discussed).

5.3.4 Learning elements (dependent variables)

Learning has already been described in detail in chapter 2. In the strategy for engaged learning, learning includes three elements, namely mastery of subject content, acquisition of generic skills and

Figure 5-5: Dependent variables



5.3.4.1 Assuring subject content is mastered

Although the one aim of an engaged learning strategy is to enable learning of skills that pervade beyond individual subject areas, the teaching matter is still grounded within the confines of a

specific course. When implementing the strategy, care must be taken that the specific subject-related learning outcomes, as prescribed in the curriculum, are met, because they are the essential building blocks of the programme outcomes for which the programme is accredited.

Learning elements that could be used to enable subject-related learning include three issues: The information must be shared with the students, the information must be applied by students, and the acquisition of the information by students needs to be accurately assessed.

In practice, this implies the following:

5.3.4.1.1 Sharing of knowledge

In paragraph 3.2, it was shown that traditional lecturing as the primary methodology needs to be avoided, since its instructivist nature, as described in paragraph 2.4, is mostly inefficient. Lecturing as a methodology should at most be employed as part of a blended learning method to ensure understanding of difficult concepts, and then preferably using the flipped classroom, as described in paragraph 3.3.8. Sharing of knowledge should also be commensurate with the prior level of knowledge that the diverse group of MBA students has when entering MBA. Knowledge should be shared with students on a few levels:

- Selection of a suitable textbook and supplementary reading material: The textbook selected should be suitable in terms of explaining the key concepts in simple terms for students without prior subject knowledge, with plenty case studies, infographics, images and simple explanations of the key concepts. At the same time, the textbook should be suitable for students with a need for more advanced knowledge, for explaining relevant calculations, formulas and graphs, as explained in paragraph 2.6.3.
- Proper guidance using the flipped classroom approach: Although the flipped classroom, as described in paragraph 3.3.8, does not stand at the centre of engaged learning, it is regarded as a significant enabler of learning, supporting other methods. Since the flipped classroom essentially means mastering the learning content at home, it is vital that the learning material supplied to students enables real learning. As an element of engaged learning, narrated PowerPoint slides are supplied to students on the LMS to master before each contact session. For students who need a more in-depth exposure and for students without any background of the subject, the slides that are supplied as a lecturer resource with the textbook, are also availed to students on the LMS. As it is vital that ALL students prepare the content at home, some form of assessment of their preparation needs to be included. This assessment is described in more detail in paragraph 5.3.6.

- Translating learning principles into simple language: Describing difficult academic concepts in layman's terms is a valuable learning strategy (Sørensen, 2015:16). A vital part of the learning strategy is to ensure that students simplify the learning content and present it to a third party or the rest of the class. This element also needs to be assessed to ensure students do it. This assessment is described in more detail in paragraph 5.3.6.

5.3.4.1.2 Learning from each other

Since a typical MBA class comprises of students with diverse subject knowledge and from different industries, learning is maximised when they share their experience with each other. In practice, this can be achieved through group discussions, either in their syndicate groups or in other groupings. As part of an engaged learning strategy, discussion questions are posed to students that are divided according to a specific demographic variable. The following groupings could be employed to facilitate group discussions: (i) Students are grouped in industry groupings, with all those representing large manufacturing together, those working in financial institutions are grouped together, those in pure services are grouped together, etc. to find common ground within the industry on the question being posed. (ii) Students are grouped in small groups that are comprised of four or five people representing different industries (so that no group has more than one person from the same industry), and discussion questions are posed such that it facilitates cross-industry comparisons. (iii) Students are grouped in their own syndicate groups to ensure discussion questions are addressed in an environment where they feel at ease. In all these scenarios, the group discussion is followed by a lecturer-facilitated discussion in class to ensure that the learning points are entrenched.

5.3.4.2 Assuring generic skills are developed

Since learning is not just subject-related, but includes the development of generic skills, the following strategies are employed:

- Introduction: Students are briefed at the beginning of the semester that acquisition of generic skills is one of the deliverables of the course and that their level of mastery of these skills will be assessed at the beginning of the semester and again at the end of the period. Students are, therefore, never left in the dark about the purpose of any skills training.
- As part of the assessment strategy, template-driven reflective journals are employed, as proposed in paragraph 3.3.9 and detailed in paragraph 5.3.6.1. Each of these templates contains some questions related to one of the generic skills, as described in chapter 2,

that the course is focusing on. Typical reflection questions are: “Gauge your level of [the skill] at this stage”; “What do you need to do over the course of the remainder of the semester to develop your [skill]?” or “Set yourself a goal on the acquisition of [the skill], to be achieved by the end of the semester”. The complete set of reflective journal templates for the different contact sessions are given in Attachment 4.

- Also, as part of the assessment strategy, real-time voice feedback is employed, as proposed in paragraph 3.5.5 and described in paragraph 5.3.3.3. The software, as described in paragraph **Error! Reference source not found.** and Attachment 5, enables the lecturer to record pre-recorded snippets of feedback and then combine them into one single audio file. For each contact session, the first snippet includes some practical hints on developing one of the generic skills. Attachment 6 shows a transcript of a typical voice note sent to a student via the LMS. During the semester, the selected generic skills, as described in chapter 4, are covered in this feedback, so that all students have some form of theoretical background on each of the generic skills.

As far as possible, links are established between each of the generic skills and some element of the learning content. (An example in operations management is the level of correspondence between the steps involved in new product development [learning content] and problem-solving [graduate attribute]). This link is highlighted explicitly in either the voice feedback, or the reflective log, or both.

5.3.4.3 Ensuring the learning has a broader impact

Learning becomes internalised when applied or shared. In essence, the workplace engagement and community engagement projects are designed to ensure such an impact. The following measures are built into the strategy to strengthen this impact.

5.3.4.3.1 Sharing of content with the community organisations

In the PowerPoint submissions that study groups have to submit before every contact session on their community project, the first slide requires that the students summarise the essence of the topic in a language that the stakeholders at the community organisation can understand. The imperative is that the community project needs to be sustainable, and that one of the methods of rendering such a project sustainable is by passing the knowledge on to the organisation. Translating the knowledge into “layman’s terms” has the additional advantage that it strengthens the learning ensued by the students.

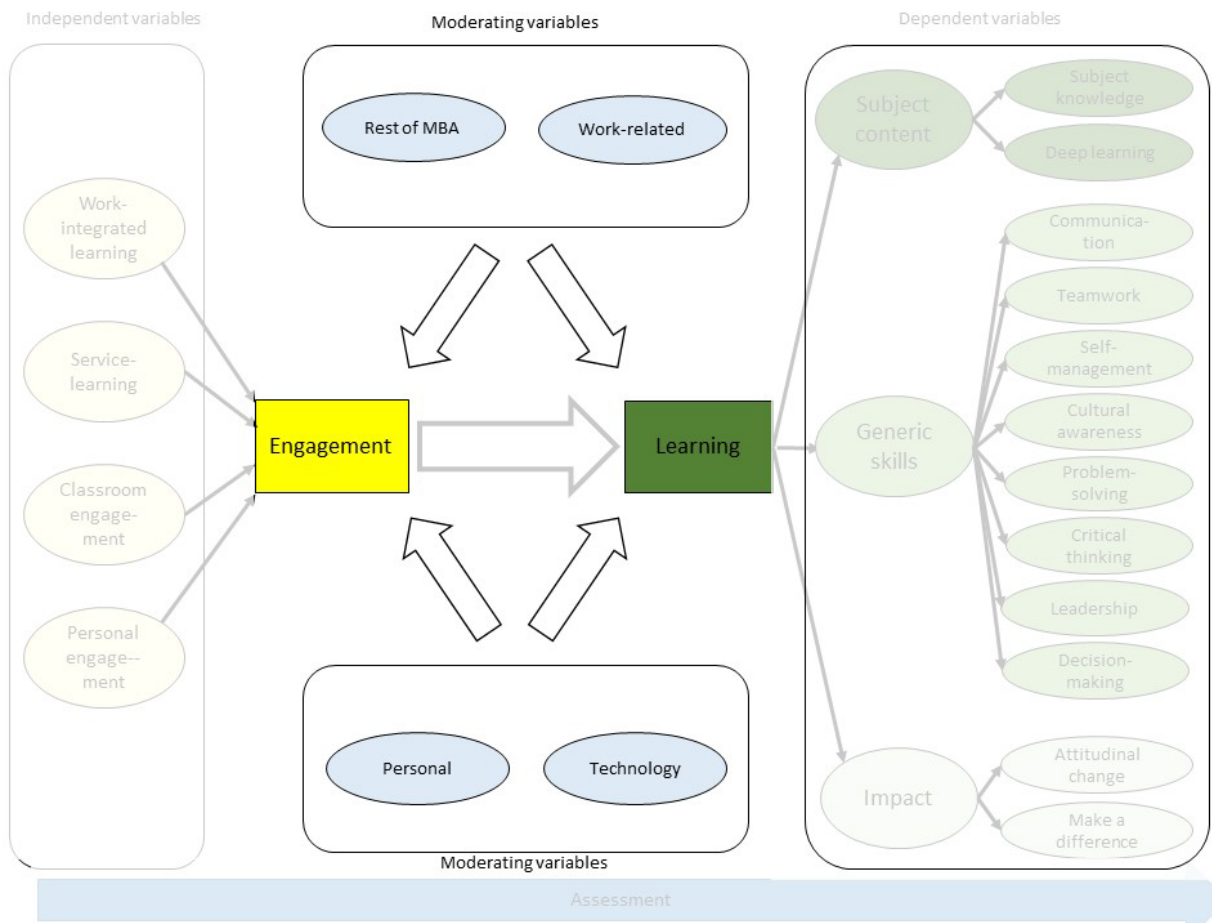
5.3.4.3.2 Sharing of learning points with the class

Part of the programme for every contact session is that a study group gets the chance to share the application of the principle being discussed in class with the rest of the class. Students are warned before that they will have to speak to the class, and the slides submitted by the students are incorporated into the lesson slides. The impact of this is that study groups learn from each other, but also that some of the solutions proposed by one study group for their community organisation's problem could also address a challenge experienced by another community organisation.

5.3.4.3.3 "Getting their hands dirty"

In the briefing for the community projects, students are told explicitly that the community project is not about acting as a consultant to the community organisation, but that they must practically effect a change in at least one aspect of the management of the organisation by "getting their hands dirty". This is also assessed in the final portfolio of evidence for the group community project.

5.3.5 Moderating variables



Although many of the moderating variables, such as the impact of other MBA commitments, family and work commitments and general environmental issues, are incidental to an MBA programme and cannot be included in the design of the strategy for engaged learning, all efforts should be taken to address these moderators pro-actively.

5.3.5.1 Personal- work- and family involvement

The following measures have been taken to ensure that, although students' involvement in engaged learning is time-consuming, the mutual influence between the course where the strategy for engaged learning is followed, and other courses, as well as the impact on their lives are minimised.

- For both the workplace engagement project and the community engagement project, provision have been made that students do not have to submit a "long assignment" (where they summarise the theory, describe the application of the theory in their workplace or in

the community organisation and where they make recommendations on improvements, based on the theory) before every contact session. For the individual assignment, the rationale for introducing “short assignments”, where students simply have to summarise the theory before the lesson, was introduced to ensure that students are prepared for classroom activities, but also as a way to give students more freedom to plan their involvement in the WIL project. Similarly, although the total curriculum has to be dealt with during the semester, and has to be reported in the final portfolio that acts as part of the assessment of the community project, study groups only have to submit two assignments over the course of the semester.

- Research, shown in paragraph 3.3.8, is clear that the flipped classroom is not per se a technique that enables learning, but that it frees time for other activities that are beneficial for learning. The flipped classroom approach was introduced to enable students to use the time available to them for preparation. Should work responsibilities prevent them from attending contact sessions, they still have the opportunity to study the theory from narrated slides. Although missing class would not be ideal, such students would not be left with a void in their theoretical make-up.

5.3.5.2 Use of technology to enhance learning

Access to technology is one of the moderating factors affecting the design of the strategy, and hence, technology is described in detail below. The use of appropriate 21st-century technologies is discussed in paragraph 5.3.5.2. The following technologies are employed as part of an engaged learning strategy to specifically facilitate learning.

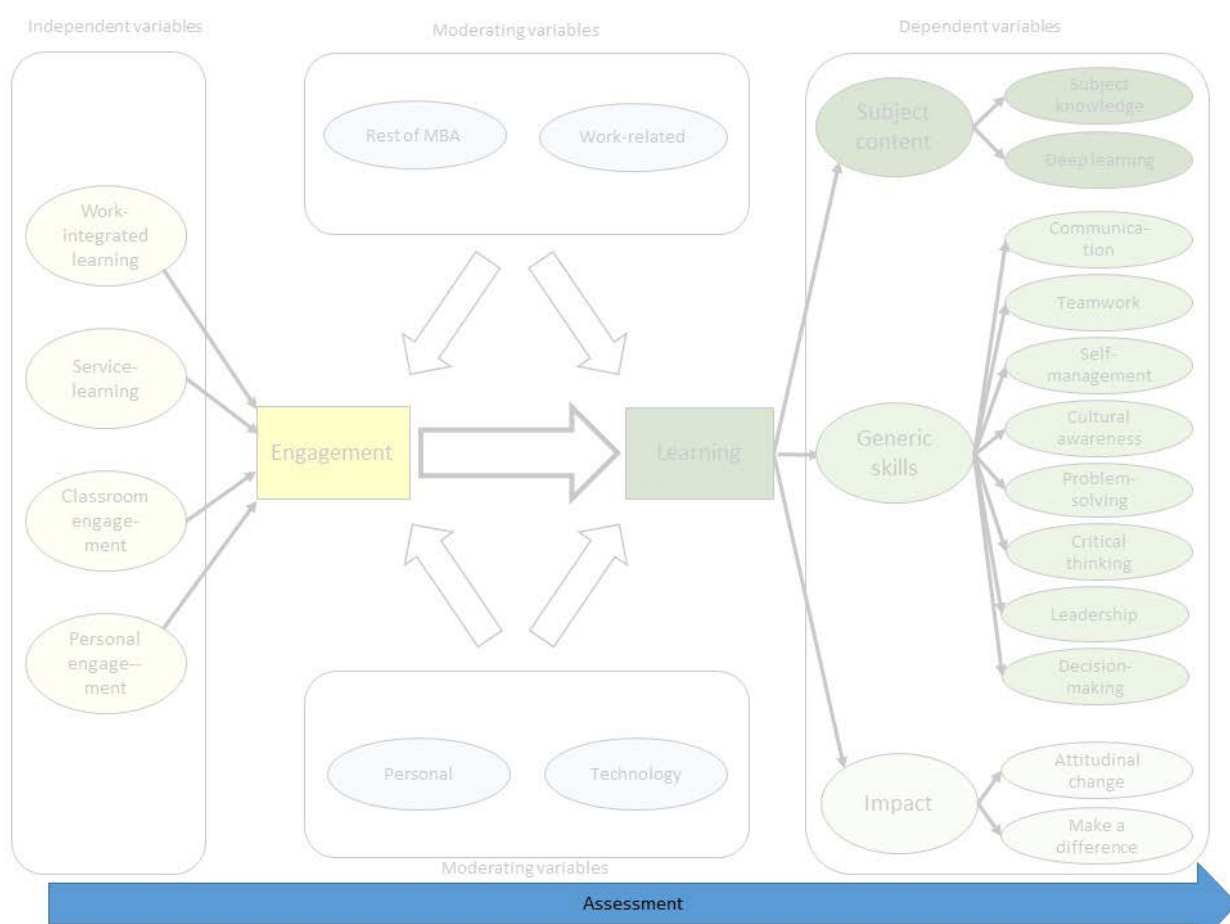
- Extensive use of the LMS: All assignment submissions, announcements, submissions of reflective logs or questionnaires and announcements are facilitated via the LMS, as described in paragraph **Error! Reference source not found..** Students that are not automatically added to the LMS participant list (for whatever reason) are manually added so that all students taking the course are guaranteed LMS access.
- Carefully selected videos: Only video content that is contributing to learning is shown in the classroom. Where necessary, videos or the link to the URL where the video is available, are distributed over the LMS.
- All submissions are electronic via the LMS: The only hard copies that are handed in, are those required by law or by the statutes of the university. All other submissions and feedback are in electronic format.

- Voice recognition (voice-to-text) software is employed for rapid capturing of reflection feedback.
- Voice feedback: After experimenting with voice recognition software, a programme was found with the name “Backchat©”. This programme allows a lecturer to pre-record certain pieces of feedback that are common to more than one student as “snippets”, and then paste them, together with personalised comments, together in one seamless audio file for each student. A transcript of one of the audio feedback files is given in Attachment 6. These audio files are then distributed to students via the LMS. Open-source sound editing software such as Audacity™ could also work well.

5.3.6 Assessment strategy

The details of the assessment of the different engagement activities are already described above.

It is critical that the learning strategy should be supported by a relevant assessment strategy.



Assessment strategies are often prescribed by the institution, but whether institutionalised or not, the following principles should accompany the assessment strategy:

- Assessment should be fair.
- Assessment should dovetail with the formal assessment policy of the institution, and should, therefore, include formative and summative elements.
- Assessment should be continuous.
- Assessment should take into account the typical constraints that are associated with working, part-time MBA students.
- Feedback should be as close as possible to real-time, as explained in paragraph 3.5.5. Assessment should reward the effort taken to compile something that is submitted.
- Assessment should be a learning experience.
- Assessment and assessment feedback should contribute to the development of generic skills among students.

The following methods, as already described in paragraph 3.5, to accurately assess whether real learning has taken place, should form part of an engaged learning strategy:

- Continuous formal assessment, also referred to as formative assessment, should not just be confined to one assignment per semester, but should as far as possible include assessment (for grades) of everything that students submit. The reality is that MBA students (such as undergraduate students) work for grades and regard any other personal development that takes place in the process as a supplementary benefit (Butz & Askim-Lovseth, 2015:637).
- Although discipline, in terms of submission requirements and due dates for assignments, should be strictly observed, the assessment system should provide some ways to accommodate the constraints of students' work environment, such as overseas travel or overtime required at month-end.
- Assessment should as far as possible NOT be paper-based, but only allow for electronic submissions. The submission and management of hard copies of assignments provides an administrative nightmare, such as checking that everyone has submitted, filing all hard copies, students not attending class due to work engagements and students submitting material of different physical dimensions, ranging from stapled documents to large lever files.
- Assessment should be practical in terms of the time available to the lecturer/marker: Although the interest of the lecturer is not the primary objective, the element of

engagement in a strategy for engaged learning necessarily involves significant time inputs of the lecturer. The time-consuming nature of assessing the assignments could be addressed by supplying templates for submissions (so that at least all students present their information in the same format), by requiring and enforcing strict length limitations and by only allowing submissions through one medium, preferably one avenue on the LMS.

- Assessment should focus not just on theoretical knowledge, but on a level appropriate for MBA students. Therefore the physical application of the theory and deep learning, as described in paragraph 3.3, should be assessed in the assessment.
- Assessment should dovetail with elements of engagement that form part of the strategy, as described in more detail in paragraph 3.6.3.
- Assessment should stimulate reflective practice: Within the time constraints of an MBA student, it is probably not realistic to require that each student compiles a reflective log before they go to bed at night. This practice could be orchestrated by providing templates.

In practice, the assessment strategy works as follows in terms of the learning taking place:

5.3.6.1 Reflection as a component of assessment

- At the end of each contact session, students complete a reflective log on a template form. These forms are anonymous. On the template, the first two questions are always: *“What is the most important things that you have learnt about today’s topic before or during today’s lesson?”* and *“What is there about the topic that you still don’t understand?”* The template forms are then collected as students leave the class and keywords are summarised in a single sheet. The templates for all the contact sessions are given in Attachment 4, and an extract from one of the answers for one of the contact sessions (in an operations management lesson on forecasting and project management) is given in Attachment 13.
- This reflection template also contains other questions, to serve as feedback on one of the elements of engaged learning that was employed during that contact session, such as *“What was your experience of the discussions in industry groups that we had in class today?”*. The template can even include other information relevant to the business school, such as *“List, in order of decreasing importance, your reasons for choosing our business school for your MBA studies”*.
- Also on the template are questions relating to the development of generic skills or general skills. These questions address three issues and are asked through questions such as (and as an example self-management skill is used): *“Self-management is a composite of a number of constructs, including grit, conscientiousness, ethical behaviour, risk-taking, locus of*

control, self-efficacy, initiative and goal setting. Do you experience that any of these skills have already started developing since you started MBA? Explain", *"On which of these skills do you still have to work on most? Explain your answer"*, *"What do you need to change to develop those skills mentioned in your answer to the previous question? Explain"*, and *"Set yourself a goal for developing your self-management skills for the rest of your MBA career. What is this goal?"*. In turn, six different generic skills are addressed.

- Before the start of the following contact session, these responses are analysed, and the most common issues mentioned are captured. In the introductory audio feedback "snippet" for students' next submission, advice is then given on how this attribute could be developed, based on theoretical research. (Two notes on the effect of this on the time constraint on the lecturer: The first time this is captured, it is time-consuming. In subsequent years the same themes regularly emerge, and it takes a quick scan to look for changes in the responses. Environmental factors do slightly change the responses: For example, if there is a major scandal in the news, the topic of ethics becomes more prominent. The second note: Research needed for the audio feedback takes some time. The feedback is then recorded as a five-to-ten-minute feedback "snippet" once, and this "snippet" is pasted into the audio feedback file sent to each student, as part of their individualised feedback. Each student thinks that this five-minute discussion on this skill is personally recorded for him/her. Since the reflection form is anonymous for ethical reasons, it is impossible to give feedback to students in a more personalised way. Attachment cross reference 5-3 voice feedback gives a transcription of such feedback for a specific student.
- At the end of the semester, a summative reflection form is completed by all the students, in which the total learning experience is evaluated. The responses are captured similar to the weekly feedback, but due to the summative nature of the end-of-semester evaluation, feedback is not necessarily given to students.

5.3.6.2 Summative assessment: Portfolio of evidence

In paragraph 3.5.1 it has been asserted that examinations are typically associated with traditional lecturing. Since the objective of engaged learning is to take the student out into his workplace and the community, it would be senseless to revert to traditional examinations. Hence, a portfolio of evidence replaces the traditional examination. The concept of patchwork texts, as described in paragraph 3.5.4, is therefore employed as part of the strategy for engaged learning, and the WIL project becomes the vehicle, where the submissions that were completed during the semester become the blocks of the "patchwork" and the portfolio of evidence becomes the "rim", framing all the blocks.

Since a distinction must be made between summative and formative assessment, it follows that the same assessment cannot count towards both forms of assessment. The portfolio of evidence focuses on the strategic application of the work that has been covered during the semester. The essence of the portfolio is that students need to analyse the strategic objectives of their workplace (or the organisation that they have analysed during the semester) and from the analyses they have performed over the course of a semester they must assess whether the present application of the theory would bring the company to its strategic goal and suggest changes to be made to enable this. In terms of time constraints, this implies that the legwork has been done during the semester, and the final portfolio is just a strategic application of the work already done. The formal briefing of the portfolio of evidence is given in Attachment 12, and the rubric for marking the portfolio is also given in Attachment 11. The reflection log that forms part of the final portfolio of evidence is handed in a separate document on a template that is given in Attachment 12

5.4 Implementation plan

A strategy only works if it can be successfully implemented. The same applies to a strategy for engaged learning in an MBA programme. In this paragraph, the roll-out of the strategy in practice is described in reasonably chronological order.

5.4.1 Preparation for implementation

Since the vehicle for the strategy is subject-related knowledge, it is vital that the presentation of the knowledge, the technology needed for successful implementation and the steps to assist in developing generic skills be well-planned, and re-planned before each semester. The following elements of the strategy should be prepared and executed before the start of the semester.

- Should group work and portfolio assessment not be part of the formal system at the business school, it is necessary to negotiate this well in advance, before engaged learning is even attempted in its present form.
- If the mode of delivery is block release, where the whole subject is to be presented in one or two two-day blocks, it needs to be negotiated, before the final schedule is finalised, that the weekends available for the subject where engaged learning is practised be as early as possible in the semester and again as close as possible to the final examination. The reason for this is that some time is needed at the beginning to introduce the approach, to select a community organisation, to ask questions and to brief the community

organisations on their roles. Between the two weekend sessions, submissions should still be in fortnightly intervals, but at the end of the semester a session is needed where all the engaged classroom sessions (lessons) are completed, as described in paragraph 5.3.6.1, where the final community project peer-assessed class presentations are done, as described in paragraph 5.3.3.2, and where the final assessment of the success of the engagement elements is completed, as described in 5.4.5.

- Subject content: Since the flipped classroom approach is followed and students are required to cover the theoretical part before each contact session, they must be allowed to work at their preferred rate. It is therefore vital that subject content to be studied at home should be available on the LMS before the start of the semester. All voice-narrated PowerPoint slides necessary for preparation should already be available before the beginning of the semester. If the strategy is employed in a multilingual environment, the narration should be available in all the languages in which the subject is taught.
- Electronic copies of study guides must also be available before the first encounter with the students, both in an interactive electronic format and in a format that students could download and print, should they prefer hard copies.
- The venues where all the contact sessions are to be presented should be inspected to ensure that the electronic systems (computer, microphone, data projector, software, Internet access, loudspeaker system and any other media that might be needed) are present and working. Where necessary, backup systems must exist, for example, a pocket loudspeaker if the loudspeaker system fails, a modem if the Internet connection does not work and cables to use a laptop as a backup and any additional backups that might be necessary.
- On the LMS, a clear roadmap must be availed to students upon registration to indicate when each topic is covered. An example of such a roadmap is given in Attachment 16. It is critical that there should be only one place that any specific assignment could be submitted on the LMS, and all possible other avenues should be blocked.
- Since this would be a new approach to many MBA students, many of them having completed their undergraduate studies before technology allowed for the flipped approach, PowerPoint shows for all the initial sessions must be compiled. These sessions include: a group-forming session (where they are divided into syndicate groups), an introductory session (where they are introduced to the flipped classroom mode of teaching and the individual and group assignments), the first lesson (where the subject is first introduced, since the first lesson is likely to be taught in the traditional teaching mode due to the notion that this would be the first time students are met, and there would not have

been time to prepare themselves for the lesson), and the session where community project partners are briefed on their role in the community project, should be completed before the start of the semester.

- Basic outlines of the PowerPoint presentations for each contact session should be prepared. Note that part of the classroom activities consists of discussion points that the students request, which implies that these presentations need to be amended after all students have submitted their individual and group assignments before each contact session, although the fundamental issues to be covered do not change much from year to year. The reason for this is that the period between each submission deadline and the contact session is only three days in which all the assignments need to be marked and the presentation needs to be updated.
- Learning Management System: The LMS must be up and running, and the system must be such that all students are automatically added upon registration.
- Electronic communication tools, such as voice-to-text technology, programs needed for audio feedback and a fully functional e-mail system, need to be operational and tested.
- An electronic mark book, whether on the LMS or in Excel format should be running with all the rubrics for marking individual or group assignments and final portfolios of evidence already included. Due to the time between each submission deadline and the contact session immediately following being so short, there is no time for the lecturer to complete this after submission. Examples of pages from such a mark book are given in Attachment 17.
- Facilitator's manual: A one-page summary of what each contact session would entail, what is needed for the session, how much time is available for each activity and any other relevant information must be compiled. An example of a facilitator manual is given in Attachment 18.
- Permission from the university to obtain student photos from the official university network must be obtained in advance so that a photo list could be compiled before the start of the first contact session. Alternatively, students could be asked to submit photos of themselves on the LMS.
- A complete set of reflection journal templates, as described Attachment 4, must be compiled before the start of the semester to ensure that all skills development issues are addressed at some time during the semester.
- Should a mobile number be given to students, the phone (and contract) for this phone must be operational at the start of the semester.

- Where a tour is included in the schedule, the necessary arrangements for such a tour must be made before the start of the semester, so that students can schedule leave at their place of work and so that it could be indicated on the work programme.
- Checklists and requirements for selection of a community organisation, letters of consent to supply to their employer, letters of introduction to the community organisation and registration forms for community organisations to capture their details and get their consent, need to be available in hard copies, as well as on the LMS.

5.4.2 Introducing the strategy

Introducing the strategy might take more than one session, because the approach is probably strange to new participants. It is possible that introductory sessions could be combined, but it is preferable to split them into separate sessions to prevent information overload and enable students to interact and discuss the issues between the sessions.

- When students enter a course for the first time, it is unlikely that they would have encountered a strategy for engaged learning before. It is also likely that a large proportion of the students have never been exposed to the flipped classroom approach. A detailed introduction to the approach is necessary to ensure they know what to do and how to do it. It could include an introduction to what the subject entails, and there must be ample time for questions and discussion.
- If students are already divided into syndicate groups, it is an advantage, but as a departure point for the strategy, it must be assumed that this needs to be orchestrated. A structured group-forming session (which could include a brief team-building exercise and a briefing on the role of syndicate groups in MBA) needs to be arranged.
- A structured session for selecting community organisations needs to be arranged. During this session, the requirements for a suitable community organisation need to be clarified, a list of potential organisations (possibly organisations that have participated in past years and have requested more help) must be supplied, the way of dealing with the organisations must be clarified and an opportunity must be given to contact the organisations and to arrange an initial meeting. This session needs to include a detailed briefing on the ethics of working with community organisations, including photographing minors without the consent of their guardians or parents, legal implications of implementing or not implementing their recommendations, respecting management's independence and any other ethical issue that might be deemed necessary for that specific organisation.

5.4.3 Getting commitment

After introducing the engaged learning approach, students need to get their employers to support the individual project. They also need the commitment from the community organisations for the group project. Also, if students are unemployed or not allowed to do the individual project at their place of work for any reason, they should have the opportunity to negotiate with another organisation to do the WIL project at the organisation. A reasonable time (at least a week) must be allowed for this, as they need to explain the approach and its benefits to the organisation, get permission to study aspects of the organisation and get a letter of consent signed by the relevant manager.

For individual WIL projects, it is not necessary to have the permission letter submitted, but it is needed to cover the student, should there be a change of management due to promotions or changes in the management structure. Should students embark on a WIL project without permission by management, it is at their own risk. This disclaimer must be shared with students in writing. For the community project, the permission letter needs to be submitted to ensure that the group obtained the go-ahead from the organisation's management to continue with the project, that information could be shared with the rest of the students and that some of the information could be published if necessary. The signed form also acts as informed consent by the community organisation.

5.4.4 Introducing the classroom engagement elements

If the preparation has been done correctly and once the strategy is introduced and students are comfortable with what to do, the two significant portions of the strategy, namely community engagement and workplace engagement projects have been launched, these two projects should run smoothly. The classroom engagement elements of the strategy are introduced one by one. As they are introduced, feedback is obtained on the reflective log template for the contact session where that element is introduced. For example, when industry discussion is first applied, the reflection sheet for that contact session contains a question on how the students experienced the industry discussion. These results are then captured.

It is vital that introduction of the different elements is done in stages, for the following reasons: (i) Too many new elements at any one contact session would confuse students; (ii) too many new elements would take too much time during that contact session; (iii) introducing a new method helps to ensure that lessons stay fresh and engaging, which would not be possible if the same

element is done too often; and (iv) the engagement element used should dovetail with the content of that specific lesson (for example, not all topics lend themselves to simulations).

Critical to the success of the elements of engaged learning is to get real-time feedback on their effectiveness, so that any perceived inefficiency could be addressed immediately.

5.4.5 Assessing the elements

Assessing the individual (WIP) project has been described in detail in paragraph 5.3.3.1 and of the community (service-learning) project 5.3.3.2. Assessment of the engagement elements described in 5.3.3.3 is done through the use of the template-driven reflective log required of students. Each of the elements is addressed explicitly through one or two questions on the reflection sheet of the contact session where that element is employed. All these reflection sheets are given Attachment 4. These responses are first scanned to look for common denominators and then, if necessary to analyse them in detail, captured using voice-to-text technology.

At the end of the semester, a questionnaire is completed by students to quantitatively assess the success of the different elements of the strategy. The complete questionnaire is given in Attachment 3.

5.4.6 In-situ changes in implementation

Although, as far as possible, the planned schedule should be adhered to, it is possible that due to external factors, the programme needs to be amended. Possible examples are external political or economic events that could prompt a change in the schedule, unforeseen natural, political or socio-economic events (such as floods that cause classes to be cancelled) or institutional issues (such as student unrest, causing the institution to close for a period). Such changes should be managed, and unexpected changes should be communicated proactively.

5.4.7 Propose implementation time-line over one semester

Below are two alternative proposed time-lines for implementing the strategy. Variants of these could be necessary, based on the structure of the institution where engaged learning is practised. The first timeline is based on the assumption that contact sessions are spaced 14 days apart, and the second one is if the mode of delivery is block-release. Incidentally, both these cases are present at the institution where this study is conducted, and in paragraph 7.3.7 the success of engaged learning during the two scenarios are compared statistically. Both timelines are built on the assumptions that all the preparations, as described in paragraph 5.4.1 are in place.

5.4.7.1 Fortnightly classes

- Week zero: Introductory session, group-forming session, the introduction of individual and group projects, contact session 1 (introduction to the course and first topics, using traditional lecturing).
- Three days before each of the sessions of week two to week 16, submission of individual and group assignment for that session. Weeks two to 16 is then presented using the flipped classroom approach.
- Week two: Contact 2: Subject topics. Introduce community project classroom presentation. Start wearing shirts with cartoons summarising the essence of the content topic. Feedback: Experience of the flipped approach, Reflection: Teamwork skills.
- Week four: Contact 3: Subject topics. Introduce games and simulations, announce international student tour, Feedback: Experience of games and simulations, Reflection: Problem-solving skills, Audio feedback: Address communication skills
- Week six: Contact 4: Subject topics. Introduce the use of videos and industry discussions, Feedback: Experience of industry discussions, Reflection: Cultural diversity, Audio feedback: Address teamwork skills.
- Week eight: Contact 5: Subject topics. Introduce individual project class presentations and group discussions in diverse groups. Feedback: Experience of cartoon shirts, feedback on whether community project of individual project feedback adds the most value, Reflection: Self-management skills. Audio-feedback: Problem-solving skills
- Week ten: Contact 6: Subject topics. Introduce International tour schedule
- Feedback: Reflection: Critical thinking skills. Audio feedback: Risk averseness
- Week twelve: Contact 7: Subject topics. Reflection: Communication skills. Experience of videos, Comparison of activities. Audio feedback: Critical thinking skills.
- Week 14: Contact 8: Feedback session, community project, learning from the community project.

5.4.7.2 Block release:

Using the flipped classroom approach there are two issues to keep in mind when scheduling contact sessions: First is that, if the students do not have some direct contact with the lecturer early in the semester, they would easily be lost, not knowing how to pursue and missing some learning opportunities early in the semester by not having briefed. A briefing on the individual project, on the community project and on what is expected of them in the flipped classroom approach is therefore vital. Second: regular contact sessions need to be scheduled as late as

possible in the semester, because students need to have completed the work on all topics before everything could be tied together during the contact sessions. The submission schedule and audio feedback are therefore identical to that of the two-weekly contact sessions (to ensure that the work gets done during the semester. Attachment 12 gives the structure of the feedback reflection sheets.

5.5 Chapter conclusion

The proposed strategy for engaged learning is aimed at real learning that includes both subject content and generic skills. The design of the learning is informed by the study on learning theories, which was covered in chapter 2, and elements of the most prominent learning theories were used to ensure that the strategy could enable real learning. As a vehicle to enable learning, the different 21st-century learning methodologies were studied in chapter 3, and a selection of these methodologies or elements from these methodologies were included in the strategy by incorporating engagement elements from four areas: Workplace engagement is achieved by incorporating a work-integrated learning project, which also accounts for the individual continuous assessment portion of the strategy. Community engagement is achieved by incorporating a service-learning project, carried out in syndicate groups, which accounts for the group assessment portion of the strategy. Engagement in the classroom is enabled by using a flipped classroom framework, which allows including a bouquet of engagement activities into the contact sessions. All of these are supported by a personal engagement strategy to ensure that the interaction between lecturer and student, and between student and student are conducive to engagement and learning.

Assessment of performance included in the strategy is carried out on more than one level: First, formal formative assessment is through an individual assignment, which covers the WIL portion and a group assignment, which covers the service-learning portion of the strategy. Informal assessment is by using an orchestrated template-driven reflective journal that is completed by students during the semester. Finally, the summative assessment is in the form of a portfolio of evidence, which is chosen such that it ties together the learning points of the individual and group work, but also that it challenges the students' cognitive processes on a more strategic level.

This chapter has addressed the fourth secondary objective of the study, namely the formulation of an engaged learning strategy.

Chapter 6 briefly deals with the philosophical basis of the research in paragraph 6.1, followed by a section on the description of the research process, both qualitative and quantitative.

5.6 Chapter summary

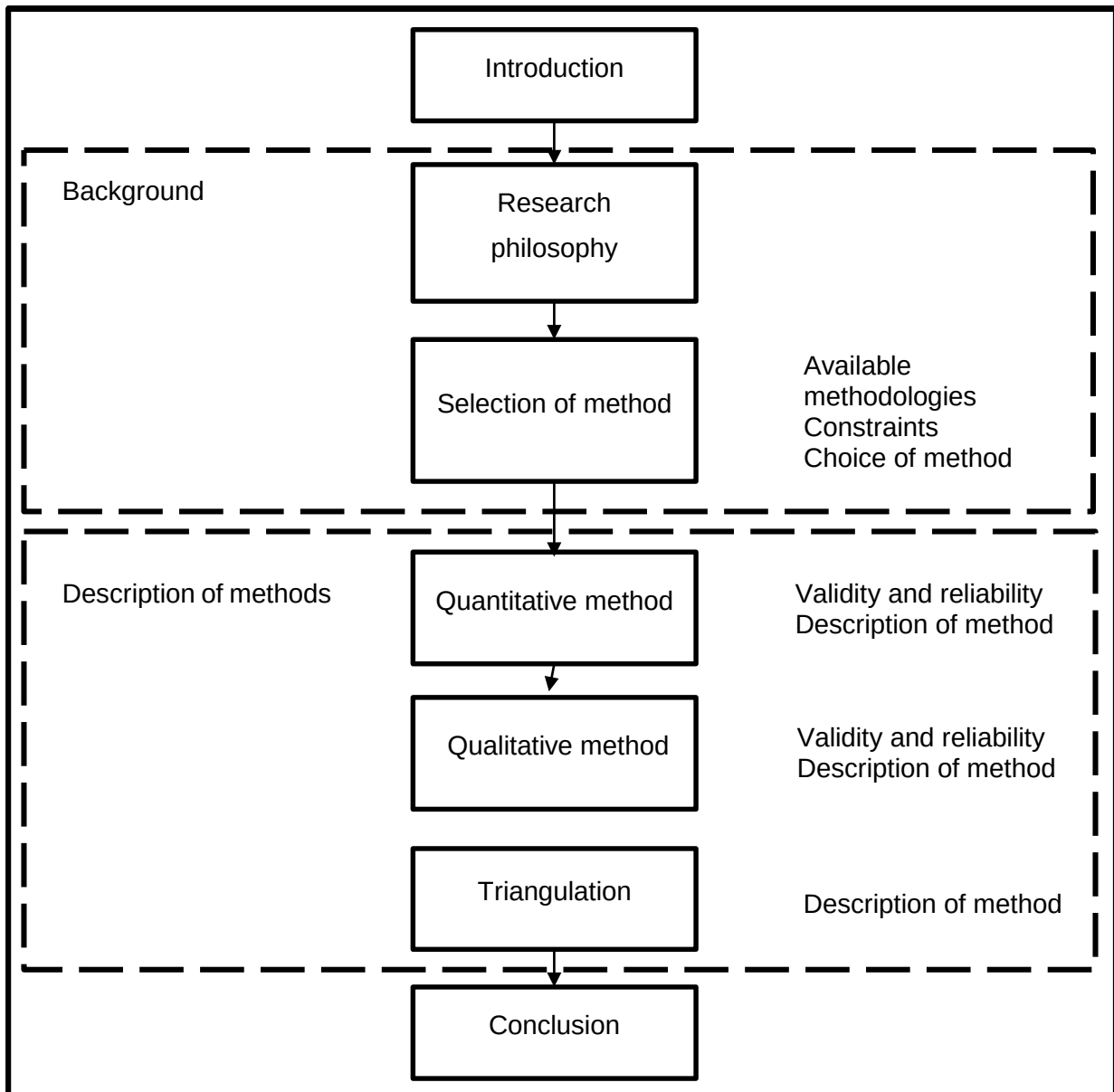
In this chapter the principles of learning, as proposed in an array of 21st-century learning methodologies, are combined into a practical strategy that could be implemented and its success measured in terms of the learning that has taken place. In the next chapter, the focus will shift to measuring the success of the strategy for engaged learning.

CHAPTER 6

METHOD FOR MEASURING THE SUCCESS OF THE ENGAGED LEARNING STRATEGY

6.1 Introduction

Figure 6-1: Structure of chapter 6



A logical sequence in the design of a new strategy is that the strategy is developed, often from first principles, then implemented, and finally evaluated (Ferreira, 2017:14). The first five chapters

of this study dealt with the development of the strategy for engaged learning, designed from first principles through a theoretical study and ending with a description of the strategy in chapter 5. The previous chapter also included the deployment of the strategy for engaged learning, explicitly referring to the operationalisation of the strategy.

6.2 The philosophical basis for the study

The primary epistemology of this study is essentially constructivist, as described in paragraph 2.7, stating that the student constructs knowledge during the learning process (Onghena *et al.*, 2018:18; Shaw *et al.*, 2018:242). Looking for a research paradigm that would dovetail well with the constructivist nature of the study, it was found that constructivism fits well with a post-positivist paradigm (Fletcher, 2017:192; Harvey, 2018:38) as the primary research paradigm of the research (Mayoh & Onwuegbuzie, 2015:105; Panhwar *et al.*, 2017:258). Post-positivism, as based on the seminal work by Popper (1959:26), is a school of thinking that maintains that scientific reasoning and common-sense reasoning, in essence, are different angles of the same process (Caldwell, 2017:6; Charmaz, 2017:36), whereas positivism refers to the goal of research simply being to describe the phenomena that we experience (Pozzebon, 2017:416). Therefore post-positivists often attempt to investigate their experiences in depth (Panhwar *et al.*, 2017:258).

So, why can this study be regarded as post-positivist? With reference to the above definition (Caldwell, 2017:6; Charmaz, 2017:36) the strategy for engaged learning was essentially formulated through a structured process, not only trying to describe the activities involved in the strategy, as done in chapter 5, but also an attempt to get an understanding of the mechanisms through which the strategy adds value to learning. Although the first steps in gauging the effectiveness of the strategy for engaged learning (as described in chapter 7) is to measure whether the strategy results in learning, which, at face value, could be described as positivist (Pozzebon, 2017:416), it goes beyond that and delve into the mechanisms through which this is achieved, which is decidedly post-positivist (Panhwar *et al.*, 2017:258). The post-positivist philosophy underlying this research is therefore exactly why the quantitative method described in paragraph 6.7.3.5 is triangulated by a qualitative study (Popper, 2017:23), so that the results can contribute to a deeper understanding of the learning theory (as described in chapter 2), to which this study is intended to make a contribution.

6.3 Research design

The research falls somewhere between the categories of a case study and an experiment, as the strategy for engaged learning is the formal documentation of a series of well-researched experiments that were carried out and implemented over the course of eight years amongst different cohorts of MBA students in the same Operations Management course at one specific business school. The intervention was meant to quantify the success of this series of innovations.

6.4 Theoretical basis

The selection of a suitable research methodology flows from the primary objective of the research. In the case of the strategy for engaged learning, the primary objective was to formulate, implement and evaluate the strategy (par 1.4.1). The formulation and implementation have been discussed in detail in chapter 5, which leaves the question: Would a quantitative or qualitative research method be optimal to evaluate the success of the strategy? It was first necessary to compare qualitative and quantitative research methods so that a method could be chosen that best addresses the constraints experienced during this specific research study.

6.4.1 Quantitative and qualitative research

Regarding a selection of an optimal method it needs to be acknowledged that researcher, their skill sets and personal preferences, and their abilities, play a decisive role in the success of any method, be it quantitative, qualitative or mixed methods (Patten, 2015:48). Quantitative and qualitative research approaches are not necessarily mutually exclusive and could be used in conjunction with each other (Trochim *et al.*, 2016:142). Therefore, a brief discussion of quantitative research, qualitative research and mixed methods follows below.

6.4.1.1 Quantitative research

Until the middle of the 20th century, the most prominent research philosophy was positivist, and therefore, the use of quantitative methods was the preferred research approach (Nietzsche & Vico, 2017:32). All definitions of quantitative research have the following elements in common: It tries to explain phenomena, it is a numerical approach, it often requires reasonably large samples and the research deals with empirical statements of “what is” (Cohen, 1981:910). Advantages of quantitative research (Choy, 2014:101) are that data analysis is relatively quick, that founded conclusions could be drawn from the statistical data, and that reliability could be established using statistical techniques. The most significant disadvantage mentioned by Choy (2014:101) is the

notion that quantitative methods are not suitable instruments when a deeper understanding of the data is required.

Types of quantitative research (Muijs, 2010:13) are survey research (which uses scientific sampling and measures characteristics of the population by statistically analysing the sample), correlational research (where the relationships between variables are investigated), experimental research (which performs tests under controlled conditions to demonstrate known truths) and causal-comparative research (where causal relationships between variables are investigated).

Quantitative research methods are best used when the following holds (Bozkurt *et al.*, 2015:9):

- The researcher wants to use strict scientific procedures to answer the research questions through a positivist paradigm.
- A sufficiently large sample exists to enable the researcher to draw sensible conclusions through statistical methods. The required sample size varies between different studies, and depends on the field of study, the rigour of the research instrument (questionnaire) used, the homogeneity of the respondents in the sample, the statistical analyses that are to be performed, the number of sub-groups in the sample and the required accuracy of the study. With quantitative research methods, a sample size of 300 is generally regarded as large enough to draw meaningful conclusions (Fugard & Potts, 2015:682; Muijs, 2010:23; Sekaran & Bougie, 2016:263).
- It is possible to use sampling methods that can enable sensible statistical analysis.
- When the most likely answer is a numerical one: Muijs (2010:7) suggests quantitative methods when the researcher wants a numerical answer, when the scale of a phenomenon is investigated and when testing a hypothesis. He suggests (2010:9) that quantitative research is not suitable when a problem is to be explored in depth, when developing theories and hypotheses, when the issues are very complex or when the researcher is looking for the meaning of the issue being researched.

6.4.1.2 Qualitative research

Post-positivism has given rise to methods that critically compare reality with the data at hand, and has acted as the main impetus for the development of qualitative research methods. Qualitative researchers employ methods that investigate the deeper meaning of a phenomenon (Barnham, 2015:852). There are five main approaches to qualitative research: narrative research, phenomenology, grounded theory, ethnographic research and case study research (Creswell, 2015:69).

Qualitative research methods are preferred in the following circumstances (McCusker & Gunaydin, 2015:539):

- One of the requirements for quantitative methods (or more than one) does not hold.
- The researcher wants to gain a more in-depth insight into the underlying issues through a post-positivist paradigm.
- The researcher aims to understand the experiences and attitudes of participants.

The qualitative portion of the present research study is essentially content analysis, although some theories are proposed in the detailed qualitative analysis, as would be the case for grounded theory (Cho & Lee, 2014:5). The reason why the method cannot purely be defined as grounded theory is that grounded theory requires comparisons between different groups or cases, which in the case of this study was not done.

6.4.1.3 Mixed methods

Mixed methods are often used when the following applies (Creswell & Clark, 2017:9):

- One data source may be insufficient.
- Initial results need to be explained.
- Exploratory findings need to be generalised.
- A study needs to be enhanced with a second method.
- A theoretical stance is needed.
- A research objective needs to be understood through multiple research phases.

In terms of mixed methods, there are a few permutations of using the different methods to supplement each other (Creswell, 2014:70; Creswell & Clark, 2017:19). A QUAL/quant study (qualitative study, supported or triangulated by quantitative analyses) is often used when qualitative methods would yield better results, albeit not conclusive on its own. On the other hand, a QUANT/qual study (quantitative study, triangulated by qualitative methods) is proposed when quantitative methods would yield better results, but the addition of qualitative methods would improve reliability and validity of the results. Other variants are (QUAL/QUANT), where the methods carry equal weight and where each of the methods on its own could give usable results, qual/QUANT, where qualitative methods are used to set up an instrument that could be used for

¹ The capitalised abbreviation refers to the leading method while the small letters refer to the supporting method

the quantitative study, quant/QUAL, where the quantitative study discovers the issues to be investigated on a deeper level using qualitative methods and qualitative techniques are used as the primary method, and qual/quant, where neither of the two methods would give usable results on its own, but where a combination of the two would render the results usable (Creswell & Clark, 2017:69).

Also, a distinction needs to be made between mixed methods and multi-method research. Mixed methods research refers to the sequential execution of the two methodologies, where both support each other or where one method is used to gather information to enable the execution of the other. In contrast, multi-method research is where the two methods complement each other, entailing analysis of the issue from different angles, each meant to address a specific portion of the research, but where the two methods are not necessarily meant to confirm each other's results (Bryman, 2017:76). In this research, a QUANT/qual mixed method design is used (par 6.5).

6.4.1.4 Triangulation

Triangulation is the practice of using multiple research methods or data sources to get a better understanding of the topic being studied. Triangulation could take the form of method triangulation (using different methods), data source triangulation (where one method could be used, but on multiple sources), investigator triangulation (using more than one researcher to improve the quality of the data collected), analysis triangulation (using more than more data analysis method, within either quantitative or qualitative research methodologies) and theory triangulation (using different theories to interpret the data). New methods of triangulation are consistently being added to the list (Carter *et al.*, 2014:545; Hussein, 2015:3).

Triangulation is a proven method to improve the quality of the research being carried out, especially when content analysis is triangulated with quantitative results (Gibson, 2017:208). Gibson (2017:209) mentions a few examples of triangulation that are relevant to this study, including qualitative analysis of experiences, triangulated with quantitative modelling of outcomes, quantitative modelling of relationships combined with qualitative analysis to uncover mechanisms and content analysis combined with quantitative survey data. She found the most important benefits of triangulation to be that it enables substantial theoretical contributions, that it reduces bias, that it allows for improved interpretation of the data, and it enhances generalisability.

In terms of the link between mixed methods research and triangulation, Flick (2017:54) refers to "strong triangulation", where triangulation becomes an extension of the mixed methods, with one method not only confirming the results achieved by the other method, but where both methods

add unique value to the conclusions. He states that methodological triangulation is not just a combination of methods, but that triangulation should start at considering the complete sets of epistemologies, research methodologies and methods of all the techniques used in the research. The notion that the methodology/methodologies should support the research objectives emerges throughout the discussion of triangulation as a way to enhance the contribution of the study.

The most critical challenge experienced when triangulating is the time-consuming nature of mixed methods research (Turner *et al.*, 2017:4), considering that triangulation is more than the mere use of more than one methods, but that it should encompass a whole methodological approach. Morse (2015:1220) also states that, if the different methods yield the same results (which is a problem when not achieved), it does improve validity, rigour, reliability, generalisability and dependability of the results. However, Turner *et al.* (2017:5) contend that the benefits of triangulation (improved insight into the issue being researched and generalisability of the results) still makes triangulation a good practice for researchers.

Specifically, in the area of business education, Molina-Azorin *et al.* (2017:183) regard triangulating research methods sometimes as somewhat “opportunistic”, because it often yields results that digress from the original research objectives. However, being creative during the research does yield significant benefits, primarily since it facilitates an increased focus on practical implementation and practical impact.

6.5 Selecting an appropriate method

In choosing the optimal method to measure the success of the implementation of the strategy for engaged learning, the constraints under which the strategy has been implemented need to be taken into account. These constraints were:

- Engaged learning, as described in chapter 5, is less suitable for large groups than for smaller groups.
- The population is a single year group that is exposed to the strategy could be too small to draw proper conclusions. At the institution where the study was done, the group size is typically less than 150 students. This study was carried out using 141 students.
- Some of the elements of engaged learning, as shown in Figure 5-3, could easily be assessed using quantitative methods (for example problem-solving, which could be an

individual activity), whereas some of them are more inclined towards qualitative methods (for example, teamwork, which is a group activity).

- A pre/post analysis is often less accurate for an intervention where skills are developed than a retrospective pre/post analysis (Ebrahimi & Azmi, 2015:851; Fernandez *et al.*, 2015:351), since participants that have not been exposed to a skill often overrate their skill level in a pre-test, therefore being exposed to the intervention.

The most notable constraint involved in triangulation (Flick, 2017:54; Molina-Azorin *et al.*, 2017:192; Morse, 2015:1221; Turner *et al.*, 2017:260) is the time-consuming nature of using more than one method, especially if the model (in this case, the strategy for engaged learning) is so extensive that a vast amount of data is needed to generate valid results.

This research falls within the category of “scholarship of teaching and learning (SoTL)”, and is therefore essentially action research (Allin, 2014:96), where a strategy for engaged learning is proposed, implemented and evaluated in a teaching and learning environment where the primary researcher fulfils the role of lecturer and the participants are the students, in this case in an MBA course. The roles involved in a lecturer-student relationship constitute a specific power relationship that necessitates some design issues to be considered, such as well-defined ethical boundaries, methods that ensure that the power relationship between lecturer and student is not abused or subject to bias and active collaboration between lecturer and student (Allin, 2014:99). One of the benefits of SoTL is that it enhances students’ attributes (which include learning and generic skills) and is therefore extremely applicable to this specific study, where the effect of engagement on learning and generic skills forms the essence of the study (Fanghanel *et al.*, 2016:29).

One proven experimental method to show the effect of an intervention is to use a non-random control group pre/post-test design (Moreau *et al.*, 2016:167) where an experimental group is subjected to the intervention while a control group is not subjected to the intervention. Before and after the intervention, the variables are measured for both groups so that the experimental group’s results can be compared to those of the control group. Requirements for this method is that a control group is available. Having seen the benefits of some of the elements of engaged learning in groups prior to the intervention, it would be unethical to subject a percentage of the participants to engaged learning while denying the control group access to those benefits. Also, any questionnaire testing the effect of a specific strategy, such as the strategy for engaged learning, would necessarily make use of several concepts or terms that are specific to that strategy. A control group would not understand these terms or concepts, and hence the use of a control group

is not sensible, as participants can only comment on the value of engaged learning when exposed to the strategy. Therefore, the use of a control group was not considered for this study. The exclusion of a control group was compensated for by the inclusion of a retrospective pre-test in addition to the pre-test (Ebrahimi & Azmi, 2015:851; Fernandez *et al.*, 2015:351).

The motivation for the study was to document a learning strategy that is proven to result in not just learning of subject-related knowledge, but also the acquisition of generic skills (learning that can be applied across different subjects). The first deliverable was to establish whether learning has taken place, which would be most easily be determined using a quantitative approach. Considering the different research approaches available and the constraints mentioned above, it was decided to employ a mixed method approach in the study. The mixed method variant that was chosen was a QUANT/qual method, where the primary method is a simple analysis of whether learning has ensued, which was then triangulated using qualitative content analysis of reflection reports submitted by participants so that the mechanisms of the learning that resulted could be investigated. The reasons for selecting this combination of methods is two-fold: Firstly, it fits in with the constructivist epistemology and post-positivist philosophy that is central to the action research carried out in this study. Secondly, it also allows the researcher to investigate the issues pertaining to engaged learning in sufficient depth to gain an understanding not only of the causal relationships between the different elements of engagement and learning, but also of the mechanisms involved in engaged learning, as defined in the study. This choice is commensurate with arguments by Green *et al.* (2015:521), who stated that the use of more than one method would improve the validity of the study.

6.6 Research method

6.6.1 Participants, population and sampling.

Participants in the study were a single first-year MBA group, spread over three sites of delivery at a business school in South Africa that uses face-to-face teaching as its primary mode of delivery. The intervention was carried out during the first semester of 2018. Knowing that a single cohort of these students usually consists of less than 150 students, the decision had to be made whether to limit data collection to one group (a single cohort) or to extend it to more than one year, so that a larger sample can be obtained for more accurate results. Although using students over a multi-year period would ensure a more extensive study population, doing so would necessarily build additional demographic and practical moderating circumstances into the study (Merriam &

Grenier, 2019:21). It was then decided to use a single year group, capture the data and conduct the analyses, and should the results not be conclusive, extend the study to more year groups. In hindsight, the data revealed conclusive results, and the inclusion of other year groups was deemed redundant.

The group of 141 participants that made up the study population, had an average age of 46 years, 61.5% male and 38.5% female, mostly non-English speaking (although English is the medium of teaching and most participants are reasonably fluent in English, only 5.8% of participants reported English as their home language), and with the exception of two participants, all have post-graduate qualifications. Participants are spread across three sites of delivery, where two of the sites have fortnightly contact sessions and one is offered in a block release format, where students meet only twice during the semester and have all the contact sessions offered during those two weekends.

These 141 participants that were registered for the course for the semester when the study was done constitute the study population. The whole study population, as far as they were available when data was collected, was included in the study. Informed consent was obtained, and no participants officially declined to take part in the study. For the initial questionnaire, 108 responses were received, constituting response rate of 76.6%. For the final questionnaire, 106 responses were received, constituting a response rate of 75.2%. Although the pre- and post-test were linked by a unique code to ensure anonymity, only 68 of the pre- and post-questionnaires could be linked to each other to enable a complete analysis, which constitutes a “usable response rate” of only 48.2%.

The sample size for the qualitative portion is more difficult to calculate, as information was collected continuously during a semester through reflection forms, and not all respondents were necessarily present every time a reflection form was completed. This was not regarded as a constraint, as it supported the post-positivist nature of the research (Trochim *et al.*, 2016:19) and proved that the research was not forced. At the end of the semester, each student completed a final reflection form, but some have chosen not to submit it. It was expected that some would not submit their reflections, since the informed consent included the option to withdraw at any stage. Calculating a point of saturation was also not straight-forward, as ten distinct sets of qualitative data were collected at ten different stages. Eight of the ten were collected on a template (because the information collected on these refer to specific elements of the engaged learning strategy and specific generic skills), but for the first (student expectations of the semester) and last (final reflection on the students' experience of the module), no template was used for the sake of an

unbiased response. However, a sufficient number of reflection sheets were received at each occasion to constitute saturation. Capturing was continued after saturation had been achieved until all responses were captured. All responses were subsequently coded and analysed.

6.7 Research process

6.7.1 The intervention

An intervention is where a group of people is subjected to a specific action/activity to achieve the desired result (Imms *et al.*, 2016:37). In the case of the engaged learning strategy, the intervention was the introduction of the main engaged learning elements of the strategy in a single MBA Operations Management class, to achieve improved learning. The intervention entailed:

- Introducing the strategy at the beginning of the intervention;
- Carrying out a group-based community engagement project in study groups for the duration of the intervention;
- Carrying out an individual-based work-integrated learning project for the duration of the intervention;
- Performing various engagement activities in the classroom to improve student engagement aimed at enhanced learning;
- Consciously developing specific generic skills during the intervention; and
- Measuring the success of the strategy at the end of the intervention.

6.7.2 Ethics considerations

The study received ethics clearance by the EduREC research ethics committee of the North-West University after a thorough scrutiny of all materials and procedures. The ethics number that was allocated is NWU-00657-18-A2.

6.7.2.1 Quantitative study

The quantitative data collection instrument had to be comprehensive enough to include all the constructs included in the strategy for engaged learning, as depicted in Figure 5-3. This had some implications on the status of the ethics of the study. Firstly, it is time-consuming. To address the time-consuming nature of the questionnaire, respondents were given fourteen days to complete the questionnaire at their leisure, should they not have wanted to do it in the time provided in

class for completion of the questionnaire. Secondly, the instrument was introduced under the supervision of an independent external expert in the field of teaching, and learning and respondents all gave written informed consent. Completing the initial questionnaire was the most awkward phase of the data collection process, as the participants were still unaware that the focus of the course is not just subject-related learning, but also the development of generic skills, which constituted the most substantial portion of the questionnaire. The reassurance that they could withdraw at any stage convinced students to participate. For the final round of the questionnaire, this was not an impediment, since by that time participants could see the value of the strategy for engaged learning, and therefore they willingly participated in completing the (even bulkier) post-test questionnaire.

6.7.2.2 Qualitative study

The qualitative portion of the study consists of a content analysis of reflection logs completed by students. The reason for choosing content analysis as the method was to get a deeper understanding of engaged learning without having to resort to methods such as interviews or focus groups that could compromise students as participants. All reflection forms that formed part of the analysis were anonymous (only identified by the unique identification code, chosen by participants to link all their responses to each other). All capturing and analysis of the data collected were performed after the end of the intervention when it could not affect the performance of the respondents in their MBA studies. This was done to remove any effect that the lecturer/student power relationship could have on participants. The qualitative process was also subjected to the ethics approval process and was included in the final ethics clearance.

6.7.2.3 Special considerations relating to service-learning

Service-learning projects often have unique ethics issues. The service-learning project, which was carried out as part of the engaged learning strategy, deals with community partners, where the nature of the intervention contained in this study is to share management practices with the management of the organisations and to help them optimise their management. As such the following was done to ensure that the behaviour of all stakeholders in the projects is ethical: When selecting community organisations to work with, a standard letter by the lecturer was given to each community organisation. This letter contains paragraphs on what they can and cannot expect from the students, what the students would need from them, and what the students are willing to do at the organisation. The letter even includes a list of the topics covered during such a project. Community partners returned a registration form where they agreed to take part in the project, based on the conditions stated in the letter. At the start of the project, all community

partners were invited to a workshop where the facilitator explains the involvement of the students, what was expected of the community partners and how the students were meant to interact with the organisation. A discussion of ethics in the project was discussed at this workshop, and all questions on ethics by the community partners were addressed. In essence, the community project is low risk, because participants interact with management of community projects, rather than with the direct beneficiaries of community organisations, and because the intervention is not a social one, but deals with management practices.

6.7.3 Quantitative research process

The quantitative research process was rather simple, and entailed the measuring of all the constructs in the engaged learning strategy, as shown in Figure 5-3 before and after the intervention, and compare the results (a simple pre/post-test). Since a pre-test often over-estimate the participants' skill level before they have been exposed to the skill, and a retrospective pre-test is often more accurate (par. 6.5), the decision was made to support the pre-test with a retrospective pre-test to address any over-estimation of participants' generic skills, and because learning could only be measured once participants had been exposed to the concepts taught in the subject.

Furthermore, participants' experience of the different elements of the engaged learning strategy could only be measured in a post-test, because participants would not have encountered these elements before the start of the intervention. This made for a rather exhaustive data collection instrument. This instrument was introduced under the supervision of an independent external expert in the field of teaching, and learning and respondents all gave written informed consent. Also, since the data collection instrument is rather bulky, respondents were given fourteen days to complete the questionnaire at their leisure, should they not have wanted to do it in the time provided for completion of the questionnaire.

6.7.3.1 Instrument design.

Designing the data collection instrument posed some unique challenges. Firstly, the instrument had to collect participants' experience of the different elements (constructs) of the engaged learning strategy, namely community engagement through a service-learning project, workplace engagement through a work-integrated learning project, and classroom engagement through a series of classroom activities, as well as personal engagement. It also needed to include respondents' experience of the flipped classroom, of assessment practices, of moderating variables and of technology employed during the learning process. Very few, if any, of these

constructs, have previously been tested on MBA level, and hence the instrument measuring respondents' experience of engaged learning needed to be designed from first principles, and it needed to embrace all the elements included in the engaged classroom.

Secondly, the study was carried out in an operations management course, and therefore the items measuring learning had to be designed in such a manner that it gauged respondents' general experience of learning, as well the respondents' mastering of the subject material.

The third challenge arose around the measurement of generic skills. There are quite a few questionnaires available that measure generic skills, or graduate attributes. However, many instruments define generic skills differently from the definitions used in this study. For example, Coetzee (2014b:900) refers to "interpersonal skills", which overlaps with communication skills, teamwork skills and some self-management skills, as they are defined in this study. Therefore, simply copying an existing validated questionnaire might not be possible. Also, some generic skills, such as self-management skills, are extensive collections of ill-related skills, with many items available to choose from, while others, such as problem-solving skills, are very specific, where the items available from different instruments largely overlap. As such, there is not an equal number of items available for testing different generic skills.

The last challenge is the notion that some data collection instruments used different scales, and if the final results of this analysis have to be compared with results from previous studies using the same instruments, different scales will make such comparison virtually impossible.

Because the majority of available items measuring generic skills used a 5-point Likert scale, it was decided to use a five-point scale to be able to compare the results of this study with those from which the items were taken. All items were gathered during a literature search so that no copyright infringements were possible.

In terms of the development of generic skills, a study by Geel (2015:62) revealed a pre/post-test of communication, teamwork and problem-solving skills where participants are involved in group discussion or an individual problem-solving exercise before and after an intervention, and the results are compared to gauge whether skills development has taken place. It was decided to include applicable elements of this in the instrument with sufficient acknowledgement to the author.

Finally, it was necessary to include that demographic information that would allow sensible data analysis, such as an indication of whether there was a difference between the skills development of respondents that are working in the private sector and those working for the government.

The final questionnaire is provided in Attachment 3, and items that were also included in the pre-test are written in italics in the questionnaire in Attachment 3.

6.7.3.2 Data collection

Since the intervention lasted a period of one semester, data collection took place on two occasions. The pre-test was introduced during a study week at the beginning of the semester, which was the very first time the students met the lecturers, and the post- and retrospective pre-tests took place during the last contact session, when students submitted their final portfolio of evidence. During the first, the pre-test was conducted during a time, specially set aside for this purpose. Because of the lengthy nature of the questionnaire, participants were allowed to take the questionnaire home and complete it at their leisure. The research was introduced by an independent expert in the field of learning and teaching. All data was captured after the end of the intervention and transferred into SPSS 25 (Statistical Package for the Social Sciences) for analysis.

6.7.3.2.1 Structure of the data collection instrument

For the sake of establishing the validity of the data collection instrument, it is necessary to summarise the structure of the data collection instrument briefly, as validity pertaining to different parts of the instrument were established through different means.

The quantitative data collection instrument used in this study consists of a number of parts:

- Part A collected demographic data, and except for ensuring that questions were clear and unambiguous, this section does not affect the validity of the instrument.
- Part B is a skill exercise that was done under supervision, where a case study was given to test problem-solving skills (individual exercise), communication skills (an activity to be carried out in groups) and teamwork skills (another group exercise). These exercises were based on a study by Geel (2015:65) where validity and reliability have been established when the instruments were used on graduate students. Part B was part of the pre-test and again of the post-test and was assessed using a rubric, which is given in Attachment 19.
- Part C consisted of items that tested the level of generic skills exhibited by respondents. These items were taken from instruments that were validated in other studies, as

explained in paragraph 6.7.4.1 and Attachment 2. Part C was part of the pre-, retrospective pre- and post-tests. The decision on which skills to include in part B and C, is discussed in paragraph 6.7.3.2.2.

- Part D measured the acquisition of subject-related skills and was part of the retrospective pre-test and the post-test. Part D listed the different topics discussed in the syllabus, as well as a few items that addressed the application of the topics in participants' work environment, community and personal environment. This part was self-constructed by the researcher from the study guide provided to students.
- Part E measured the experience of participants of the different elements of the engaged learning strategy (community engagement, workplace engagement and classroom engagement), as well as some items referring to supporting elements that formed part of the engaged learning strategy (assessment, the value of the LMS and other technology) and possible moderating variables. Also included in part E were other benefits that could accrue from the engaged learning strategy, as derived from the discussion of different learning methodologies in chapter 3. Part E was self-constructed and only formed part of the post-test, as it contains items only relevant to respondents' experience of the engaged learning strategy.

It must be noted that the sections of the questionnaire were not labelled "Part A" to "Part E" in the actual questionnaire distributed to students, firstly because the questionnaire was administered during two occasions, but also because the order in the actual questionnaire was slightly different to that being described above. For example, generic skills exhibited by participants were measured before their experience of the various elements of the engaged learning strategy, to ensure that participants were not led towards assuming that the strategy must necessarily have contributed to skills development. However, for the sake of simplicity, these five parts of the questionnaire are discussed separately in the section below.

6.7.3.2.2 Decision on which skills to include in the quantitative questionnaire

For the qualitative portion of the study, it was envisaged that the skills that do develop would emerge from participants' reflection reports, as described in paragraph 6.7.4.1. Because the data collection instrument had to include a large number of constructs, it was decided to limit the number of generic skills. However, before the start of the intervention, it is necessary to decide which skills to include in the quantitative questionnaire, so that a pre-test can accurately assess the baseline level of those generic skills that are studied.

A generic skill will be included in the questionnaire if the following requirements are met:

- A measurable improvement in the mastery of the skill could be observed during one single semester (which is the duration of the intervention).
- Some of the different skills that were discussed are related, and if the development of a particular generic skill could be measured by measuring another of these skills, the latter should be measured.
- Since engagement is an integral part of the strategy, skills that relate to engagement, either as antecedents or precedents, should receive preference.
- Contextual factors relating to the environment where the study is carried out could render the measuring of a specific skill not sensible.

Considering the model given in Figure 4-5, which is summarised in paragraph 4.3.11, the following skills are included in the quantitative questionnaire.

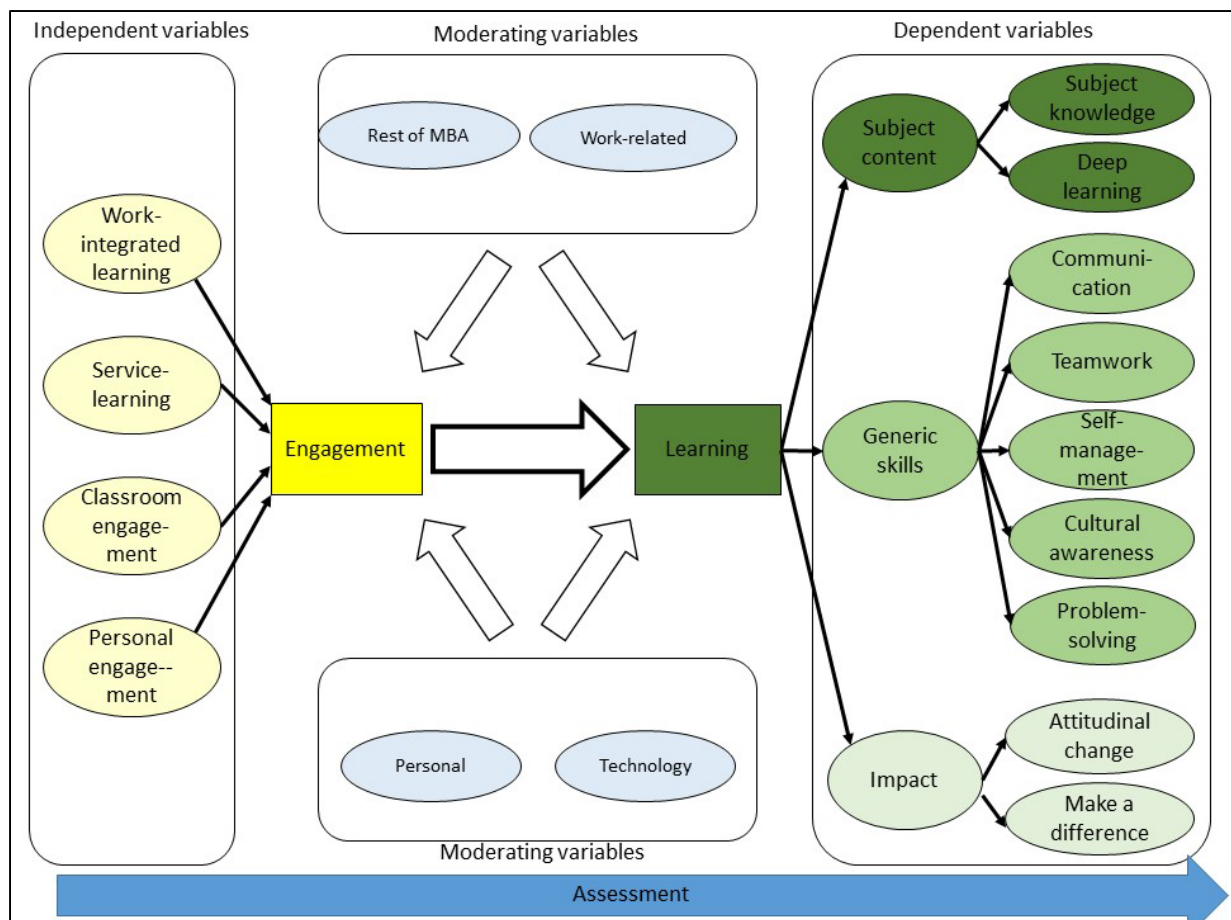
- Leadership is EXCLUDED from the empirical study for the following reasons:
 - o Most instruments measuring leadership skills (in contrast to leadership styles) measure the different skills that have been proven to contribute to leadership. These include decision-making, problem-solving, communication, self-management, critical thinking and cultural awareness. (Ebrahimi & Azmi, 2015:850). Measuring leadership skills would, therefore, be a duplication of measuring the other skills.
 - o Of all eight skills mentioned in this chapter, leadership skill is the one skill that takes a longer time to develop (Frich *et al.*, 2015:371), and that takes place in the work environment, rather than in an MBA course (Baron, 2016:309).
 - o At the business school where this study is undertaken, there is a module dedicated to leadership. Focusing on leadership would duplicate this.
- Teamwork is INCLUDED in the empirical study, for the following reasons:
 - o A service-learning project that is carried out in syndicate groups is a significant element of the engaged learning strategy described in chapter four. The literature on service-learning is clear that one of the skills, developed during service-learning projects, is teamwork (Barth *et al.*, 2014:80; Hébert & Hauf, 2015:48; Jensen *et al.*, 2014:328). This study could verify this important link between service-learning and teamwork.
 - o A large portion of the learning and teaching model at the business school where this study is done, entails group work, although it has rarely been established whether teamwork skills are actually honed and developed in these group projects. This study could contribute to that.
- There is an overlap between the processes involved in problem-solving and decision-making (Kaner, 2014:7). For this reason, decision-making is EXCLUDED from the

empirical study, but problem-solving is INCLUDED. Items collected from instruments measuring decision-making could be included in the portion of the instruments dedicated to problem-solving.

- Self-management is a skill that consists of very diverse sub-skills, as diverse as time-management, ethical behaviour, self-discipline and self-knowledge (Savitz-Romer *et al.*, 2015:26). Some aspects of self-management are psychological constructs (Wesley *et al.*, 2017:89) and do not fit the description of a *skill* that can be developed in one semester. However, some of the more practical skills of *self-management* are identified and INCLUDED in the quantitative study.
- Although communication consists of various sub-skills such as written communication, oral communication, assertiveness and listening skills (Bedwell *et al.*, 2014:177), communication skills are teachable (Avolio, 2015:13) and could be developed in a reasonably short time. Most importantly, communication is a critical element of engagement, and as such, *communication skills are INCLUDED* in the empirical study.
- Critical thinking skills have been proven to be demonstrated by measurable skills such as problem-solving, decision-making and communication. Some of these are dispositions rather than skills. Therefore, *critical thinking per se is EXCLUDED* from the study.
- If the above logic holds, that some measurable skills are dependent on other skills, cultural awareness should be excluded from the empirical study, since it is one of the foundational generic skills in Figure 4-5. However, *cultural awareness is INCLUDED* in the empirical study, for three reasons: Firstly, it is intimately related to the concept of engagement (Kurpis & Hunter, 2017:44; Shen, 2017b:21). More importantly, the list of generic skills was compiled by combining two lists of skills, namely a list from studies that ranked generic skills listed in literature published between 2014 and 2016 (par 1.3), and a second list that listed generic skills (unranked) in studies published since 2017 (par 4.2.7). In the second, more recent list, cultural awareness is highly ranked, but in the list of publications before 2016, cultural awareness does not even feature. The rising importance of cultural awareness is linked with global issues such as migration, Brexit and globalisation (Thomas & Inkson, 2017:40), and is therefore likely one of the generic skills if steadily increasing importance. Finally, in a diverse population such as in South Africa, where this study is carried out, cultural awareness is vital.

Based on the logic discussed above, the strategy for engaged learning, as already proposed in Figure 5-3, is adapted to the diagram showed in Figure 6-2.

Figure 6-2: Strategy for engaged learning, adapted for research



6.7.3.3 Validity of quantitative data

Validity in quantitative research is defined as “trustworthiness of the data” (Elo *et al.*, 2014:8). Heale and Twycross (2015:66) refer to validity in quantitative research as the extent to which the content is accurately measured and distinguishes between several categories of validity, namely content validity, construct validity and criterion validity.

Trochim *et al.* (2016:56) categorise validity slightly differently and distinguish between internal and external validity. Internal validity refers to the causal effects that exist in the research: If the data analysis proves that a proposed causal effect does exist, the results can be said to be internally valid. In this study, internal validity will, therefore, be established post-facto and reported on in paragraph 8.2.1. External validity refers to the broader impact of the research, and deals with issues like sampling, whether the constructs are defined such that they represent the real issues and whether the measurement is accurate, usually labelled “construct validity”. They subdivide construct validity into translation validity (consisting of face validity and content validity)

and criterion-related validity (consisting of predictive validity, concurrent validity, convergent validity and discriminant validity, also referred to as divergent validity).

Heale and Twycross (2015:67) clarify the different categories of validity, using practical definitions. Content validity refers to whether the instrument measures all the content that it should regarding the construct. Construct validity refers to the ability to infer findings to a larger population. Construct validity consists of homogeneity (that the instrument must measure one construct), convergence (that the instrument measures concepts similar to other instruments) and theoretical validity (that the results are the same as the theory predicts it to be). Criterion validity refers to how well the instrument correlates with the results of other instruments measuring the same construct and can be subdivided into convergent validity (high correlations with other instruments), divergent validity, also referred to as discriminant validity (low correlation with instruments measuring other constructs), and predictive validity (high correlation with future criteria).

Using these definitions, the data collection instrument that was used was analysed to establish whether it conforms to the different categories of validity:

6.7.3.3.1 External validity

In the delimitation of the study, it was clearly stated that the strategy for engaged learning was developed at a specific business school and is therefore tested at that business school. Since the sample for the study consisted of a whole cohort of 141 MBA students at this business school, where no-one chose to abstain from the study, it could be concluded that the sample represents a valid selection of the students from the business school. External validity is thus inferred and will not be discussed further. The possibility of extrapolating the results to other MBA programmes will be discussed in more detail in chapter 8.

6.7.3.3.2 Face validity

Face validity refers to how well the metric represents the construct at face value. Based on the literature that forms the basis of engaged learning, all three elements of the engaged learning strategy (service learning, work-integrated learning and classroom engagement exercises) have been proven to improve subject knowledge, as well as to develop generic skills and yield various other benefits, as described in paragraphs 3.3.3.3, 3.3.4.3 and 3.3.7.3. Face validity is regarded as the weakest of the different categories of validity (Trochim & Donnelly, 2007:56), as it is the most difficult to quantify. Since the learning portion of the questionnaire measured the different

topics of the subject curriculum and the skills development portion came from validated instruments, it could be construed that those portions of the instrument measuring subject learning and generic skills development have face validity. The notion that the study is a mixed methods study, where the results from the two methods support each other, also added to face validity. Face validity was therefore established.

6.7.3.3.3 Content validity

Content validity is the basis of the other categories of validity (Heale & Twycross, 2015:66). In essence, content validity refers to the content relevance of the items (i.e. the ability of the selected items to reflect the features of the construct) in an instrument (Zamanzadeh *et al.*, 2015:165). As such, content validity is a property of the scores achieved by an instrument, and not of the instrument itself, so that validity should be established anew for each study where an instrument is used. As such, the process of establishing content validity begins during the design of the instrument. The use of previously validated instruments would contribute to content validity, but would not guarantee it, and therefore, validity should be established again during a study. Kassam-Adams *et al.* (2015:e95) also suggest that supporting quantitative data with narrative comments significantly add to the content validity of an instrument in a specific study. The notion that this study uses QUANT/qual triangulation and that the quantitative and qualitative portions of the study, as discussed in detail in chapter 7, lead to the same conclusion, virtually guarantees content validity.

Also, during this study, the issue of content validity was addressed by the following means:

Part A (demographics): not applicable

Part B (generic skills exercise): The items used in the pre- and post-test were identical. Only the paragraph that was used as a case study was different between the pre- and the post-test, but care was taken that both the case studies contained virtually the same type of scenario. The exercises that were used from the study by Geel (2015:81) were compared with the theoretical discussion of the three generic skills that were tested, as discussed in paragraphs 4.3.1, 4.3.2 and 4.3.4. Moreover, this exercise, including the one scenario used, the questions asked and the rubrics used for marking, were taken from a study by Geel (2015:13), where the instrument was validated, albeit for a graduate setting.

Part C (generic skills questions): As with the skills exercise, the items were taken from validated instruments, but each item was compared to the information contained in the discussion of generic

skills, as described in par 4.3. The biggest challenge in establishing validity was amongst the items where the source document labelled the different generic skills differently to the categories used in this study, as described in par 6.7.3.1. An example is a study by Coetzee (2014b:900), where she uses a category “interpersonal skills”, which is a combination of communication skills and teamwork skills, the latter being the constructs that are used in the present study. Cross-checking the individual items with the theory was done to ensure content validity and to accurately allocate items to the constructs in the strategy for engaged learning.

Part D (subject learning): Since the instrument contained items on the different topics included in the curriculum, the items were selected from the study guide and listed in the order in which they are covered during the semester to ensure content validity. Concepts that might be ambiguous were explained in easy-to-understand English.

Part E (engaged learning elements) was the most challenging part of the questionnaire to design for content validity purposes. As mentioned in chapter 1, this research stems from a series of innovations that were introduced step-wise over eight years. The portion of the questionnaire dealing with the different elements contained in the engaged learning strategy was similarly introduced over the same eight-year period, where a questionnaire was distributed at the end of each semester for the sake of receiving feedback on the teaching effectiveness rather than for formal research purposes. The portion of the data collection instrument dealing with engaged learning was a combination of these questions. To ensure content validity, these items were cross-checked against the different major learning methodologies discussed in chapter 3. Those innovations forming part of the engaged learning strategy, that were never mentioned anywhere in the literature (such as the inclusion of an activity where participants made up songs and poems to summarise the essence of a specific topic discussed, as an alternative form of reflection) were discussed with subject experts before being included in the questionnaire.

6.7.3.3.4 Construct validity: Homogeneity

Homogeneity, along with convergent validity and divergent validity, is best established by confirmatory factor analysis (Trochim & Donnelly, 2007:56). Aguado *et al.* (2015:12) propose a higher cut-off value for factor loadings (suggesting eigenvalues >0.30) as a way to establish construct validity (especially homogeneity) through factor analysis, stating that inter-factor correlations should be established as an accurate estimate of construct validity. Homogeneity means that the instrument must measure one construct (Heale & Twycross, 2015:67). This is a challenge if a questionnaire is designed to measure a rather large number of constructs, as is the case in the strategy for engaged learning as given in Figure 5-3. To ensure homogeneity in the

total questionnaire, it was divided into the different parts as described in paragraph 6.7.3.2.1, albeit not labelled as such in the questionnaire. Furthermore, specific constructs were subdivided even further, and the items of the subdivisions were provided together, to ensure that respondents were always aware of what is being measured by that specific item.

Part A (demographics): not applicable

Part B (generic skills exercise): The skills exercise, practically measuring problem-solving, communication and teamwork skills, was subdivided into three distinct sections for the three skills that are being tested. This subdivision ensured that each section measured only one construct for the sake of homogeneity.

Part C (generic skills questions): The portion of the questionnaire measuring the different generic skills was deliberately designed such that all the generic skills are mentioned, without being subdivided into sub-parts for each generic skill. The reason for this is threefold: Firstly, during the introduction of the strategy to participants at the beginning of the intervention, it was stated to them that the purpose of the intervention was not just to ensure subject learning, but to ensure that generic skills develop. If not properly managed, this statement to participants could lead to the Pygmalion effect (Jeffries & Reed, 2015), where participants believe that their scores in the post-test *have* to be higher than during the pre- or retrospective pre-tests. This could especially be the case during the collection of the retrospective pre- and post-data, which took place on the same occasion. (It is for this reason that the retrospective pre-test was complemented by a pre-test, taken on a different opportunity). To ensure that respondents were not being led, these items were not grouped into smaller sub-parts representing individual generic skills, but were instead grouped (in contrast with the items measuring the elements of the engaged learning strategy, as discussed above). The second reason for not subdividing the items into clearly labelled sections representing the separate skills is that the theory, as described in chapter 4, maintains that generic skills do not develop in isolation, nor are they defined in isolation from each other. Teamwork skills, for example, is a composite of other generic skills, such as communication between team members, and it could be possible that some of the items contained in a sub-section of the questionnaire, designed to measure a specific skill, would refer to some of the other generic skills contributing to that skill. In such a case, placing questions in sub-parts could have jeopardised the accuracy of the measurement. Thirdly, there is a possibility that a generic skill, not originally intended to be part of the research, could emerge from the responses. Although placing all the questions measuring a specific generic skill in one labelled section would have made data capturing easier for the researcher, it could have precluded such a construct from

becoming apparent. However, for the sake of homogeneity, although the numbering of the items does not suggest that different constructs are being measured, the items were included in clumps, each representing one skill.

Part D (subject learning): This section measures knowledge, rather than skills (as is the case for part C) or experience (as is the case for parts E and F). Therefore, the structure of the questions measuring subject learning was different from those measuring generic skills of engaged learning elements, and all the items referring to the learning of academic content were placed in one part. It had to be clear that subject learning was the issue being measured. Homogeneity is, therefore, ensured in this portion of the questionnaire.

Part E (engaged learning elements): Since this part measures a few distinctly different constructs that were not to be confused with each other, it was subdivided into sub-sections, and each subsection was labelled (using headings such as “The following questions measure your experience of the group community project”). This was done to ensure homogeneity. However, items relating to possible benefits accruing from the strategy and those relating to moderators were not separated from those relating to technology and assessment, as technology and assessment could act as possible moderators in the study (such as inadequate availability of the learning management system being a possible moderator to learning). Visibly subdividing this part into sub-sections could lead respondents towards biased answers. However, to ensure homogeneity and for the sake of understanding, these questions were also grouped so that those describing the same element (such as assessment or the learning management system) were grouped.

6.7.3.3.5 Criterion validity: Convergence

Voorhees *et al.* (2016:121) define convergent validity as the extent to which the results correlate with other methods designed to measure the same construct and suggest the use of confirmatory factor analysis. Convergence was not equally straightforward for all the parts of the instrument.

Part A (demographics): not applicable

Part B (generic skills exercise): Convergence was established by correlating the results from the skills exercise to those of the questionnaire items measuring the same construct. In all cases, Pearson correlations coefficients were calculated, using the difference between the pre-test and the post-test result for a variable as a composite variable. (For example, teamwork-diff was defined as post-teamwork minus pre-teamwork, teamwork-exercise-diff was defined as post-

teamwork-exercise minus pre-teamwork-exercise, and teamwork-diff was correlated with teamwork-exercise-diff). All these correlations were statistically significant at the 0.01 level. For communication ($r = 0.671$) and problem-solving, ($r = 0.728$) high correlations were reported and for teamwork ($r = 0.318$) a medium correlation was reported. In all cases, the correlations were positive. Therefore, the generic skills exercise is convergent with the generic skills questionnaire.

Part C (generic skills questions): Convergent validity was established by using items from other previously validated instruments. It was not possible to compare all the final results with those of previous studies, partly because some of the instruments from which the questionnaire was compiled was tested on samples with demographics so different from the sample in this study, that any comparison would not necessarily give accurate results, but also because some of the constructs were defined slightly differently in some of the instrument used, although the individual items would clearly fit into the present definitions of the different skills. However, the factor analysis described in paragraph 7.2.1 proves that convergent validity was established.

Part D (subject learning) and Part E (engaged learning elements): Since these were self-constructed items, no convergent validity test was possible.

The procedure that was chosen to prove convergent validity entailed subjecting the entire questionnaire (excluding the demographics section) to a principal component analysis with direct oblimin rotation, and then to establish whether the different constructs of the engaged learning strategy do appear as separate factors. Acknowledging that the questionnaire was a rather expansive instruments, measuring quite a number of constructs, it was anticipated that such a factor analysis could yield factors not directly related to the constructs of the engaged learning strategy, factors that measure a subset of one of the constructs or that some of the constructs might yield more than one factor.

Since the data collection consisted of three phases: a pre-test, retrospective pre-test (taken with the post-test) and a post-test, it was decided to use the results of the post-test for the factor analysis, as the post-test was the only test that contained all the sections and the post-test would give the most informed opinion of respondents. The results of this factor analysis are discussed in more detail in paragraph 7.2.1, but in short, the factor analysis described in paragraph 7.2.1 proves that convergent validity was established, since all the elements of the engaged learning strategy, with the exception of the loosely defined “classroom engagement activities” were extracted as separate factors.

6.7.3.3.6 Criterion validity: Divergence (also referred to as discriminant validity)

Divergent, or discriminant, validity refers to the extent to which constructs do not measure what they are not supposed to measure. Voorhees *et al.* (2016:121) maintain that discriminant validity is about showing that the different constructs in a study are distinct and that it could be examined at either construct or item level, but suggested that limited cross-loading of items in a factor or principal component analysis suggest high discriminant validity.

The process followed to establish convergent validity would also establish divergent validity, if duplicate extraction of items (items that appear in more than one factor) would be minimised. In this case, each factor that was extracted would only measure one construct, but if the factors were homogenous enough to show that each extracted factor referred to only one of the constructs in the engaged learning strategy, divergent validity would be established. This was the case, as the results in paragraph 7.2.1 show.

Divergent validity was also established per section of the questionnaire:

A (demographics): not applicable

Part B (generic skills exercise): The skills exercise measured three skills: The first exercise measured communication skills, where participants were involved in a group discussion on a case study and had to rate their communication skills relative to those participants sitting on either side of them. Also part of the group exercise, participants had to measure their teamwork skills relative to those participants either side of them. Benchmarking their skills with those next to them was introduced with the specific aim of increasing the validity of their self-evaluation. The third was an individual problem-solving exercise, where participants were confronted with a real problem and had to come up with a solution following a formal problem-solving process. All three these tests were done at the beginning and again at the end of the intervention, the only difference between the pre- and post-tests being different (but very similar) scenarios given in the case study and the problem that needed solving. Since these exercises were very explicitly aimed at specific skills, divergent validity is established.

Part C (generic skills questions): The biggest threat to divergent validity in the generic skills section of the questionnaire lies in the relationships between the different skills measured. It has been established in chapter 4 (as summarised in Figure 4-5), that different generic skills are interrelated and that some of the generic skills are a composite of specific skills, some of which could form part of another generic skill. An example is that the skill to ask questions, which is

essentially a communication skill, is also key to problem-solving, teamwork and cultural awareness. This threat is complicated by the notion that various instruments that measure generic skills, from which items were obtained for the questionnaire, often group skills together differently.

The principal component analysis, discussed in paragraph 6.7.3.3.5, also addresses divergent validity. While acknowledging the constraints mentioned above, it was found that the following skills emerged from the principal component analysis in distinct factors:

- Factor 5: Teamwork
- Factor 6: Cultural awareness
- Factor 8: Self-management
- Factor 18: Self-management (Psychological issues)
- Factor 19: Self-management (Action orientation)
- Factor 12: Communication
- Factor 14: Communication (Sharing information)
- Factor 20: Communication (Communication in teams)
- Factor 17: Problem-solving

Reliability of these factors is reported in chapter 7, paragraph 7.2.1.

Part D (subject learning): Subject learning was tested by gauging participants' levels of knowledge on the different topics in the syllabus in the retrospective pre- and post-tests. Testing subject learning in the pre-test would not be sensible and was therefore not done. Some items, pertaining to learning from different elements of the engaged learning strategy, were also included. This section was distinct from the other sections. During the principal component analysis, only one distinct factor was extracted that measured learning. Divergent validity is thus established.

Part E (engaged learning elements): The most challenging part of the questionnaire to establish divergent validity was the part measuring participants' experience of the different elements of the engaged learning strategy, as well as the benefits that accrued from the strategy and the moderators that could influence the learning. To mitigate this, questions on the community engagement project, on the workplace engagement project, on classroom engagement activities, on moderators and impact, albeit in the same part of the questionnaire, were grouped to ensure that confusion between the constructs was limited.

During the factor analysis discussed in paragraph 6.7.3.3.5, the following factors were extracted that refer to the elements of the engaged learning strategy:

- Factor 2: Benefits
- Factor 13: Community project benefits
- Factor 3: The project approach in general
- Factor 4: Community project
- Factor 10: Workplace project
- Factor 11: Moderators
- Factor 16: Moderators (Technological issues)

Reliability of these factors is discussed in chapter 7, paragraph 7.2.1. No factor was extracted for classroom engagement. Reasons for this are proposed in chapter 7, paragraph 7.2.1. However, the list of factors is sufficient evidence that the self-constructed portion of the questionnaire has divergent criterion validity.

6.7.3.3.7 Criterion validity: Predictive validity

Predictive validity is often the most problematic category of validity to prove quantitatively. Predictive validity refers to the ability of the study to predict what it should. Predictive validity is addressed in more detail in the discussion of the validity of the qualitative study in paragraph 6.7.4.4 below.

In summary, most components of validity are best established by first (qualitatively) ensuring that the questionnaire measures what it is supposed to measure during the design of the instrument, and then analysed by carrying out confirmatory factor analysis (preferably), although exploratory factor analysis would also help to prove validity. The factors that were extracted were compared using correlation coefficients to establish discriminant and convergent validity. Factor analysis was done to establish the validity and is reported in paragraph 7.2.1.

The most important measure taken in this study to ensure validity was to triangulate the quantitative findings with a thorough qualitative study, where all the respondents in the quantitative study participated. Per se, triangulation by using mixed method research improves validity for both qualitative and quantitative methods employed.

6.7.3.4 Reliability of quantitative data

Reliability refers to the repeatability of the measurement (Trochim *et al.*, 2016:146). A reliable instrument would yield the same results when retested amongst the same population. The basis of reliability is that an observed score in any item is the sum of the true score and an error. The error can be subdivided into systematic error (where the mean of the measurement shifts) and random error (which does not affect the mean, but it does affect the distribution of responses around the mean).

The most commonly used method of establishing the reliability of an instrument or a construct is by calculating Cronbach's alpha coefficient. Cronbach's alpha coefficient is calculated using the formula

$$\alpha = \frac{N^2 \overline{cov}}{\sum s_{term}^2 + \sum cov_{term}}$$

Where the numerator is the square of the number of items (N), multiplied by the average covariance between items and the denominator is the sum of all the elements in the variance-covariance matrix (Field, 2014:784). Generally, an alpha value greater than 0.7 is regarded as sufficient to infer reliability (Trochim & Donnelly, 2007:63).

Reliability for the quantitative study was established by calculating Cronbach's alpha coefficient for all the factors that were extracted during the principal component factor analysis. Only those factors where the alpha values were higher than 0.7 were reported. The reliability of the factors extracted is reported in chapter 7, in paragraph 7.2.1.

6.7.3.5 Analysis methods

All statistical analyses were carried out using IBM SPSS 25 (Statistical Package for the Social Sciences).

Since the aim of the measurement was merely to establish whether learning has ensued during the intervention, it was necessary to establish whether there was some development of subject knowledge and generic skills between the pre- and post-test. Since some parts of the instrument only compared the pre- and post-tests (such as the practical skills tests) and some parts of the instruments only measured the retrospective pre- and post-tests (such as the part measuring learning of subject knowledge), these tests were compared using paired sample t-tests. Paired sample t-tests are designed to compare analyses on the same sample on two occasions (Pallant,

2013:243). However, the tests for generic skills development were included in the pre-test, retrospective pre-test and post-tests, and these were analysed using repeated measure ANOVA.

For the paired sample t-tests, statistical significance was established by calculating the p-values. A 95% confidence level ($p < 0.05$) was regarded as sufficient proof that the results are statistically significant. Practical significance was established by calculating the effect size using eta squared values. For this calculation, 0.01 was regarded as a small effect, 0.06 as a medium effect and 0.14 or higher as a large effect (Cohen, 1989:17; Pallant, 2010:263). Mean values for both the pre- and post-tests, and mean increases between the pre- and post-test values, as well as standard deviations, were also reported, including the confidence intervals of these mean increases. The eta squared values were calculated manually, using the formula:

$$\eta^2 = \frac{t^2}{t^2 + (n_1 + n_2 - 2)}$$

where t = the t-value calculated in the t-distribution and n_1 and n_2 are the two sample sizes

To confirm the practical significance for the t-tests, Cohen's d-values were calculated, where 0.2 is regarded as a small effect, 0.5 as a medium effect and 0.8 as a large effect size. The formula used for calculating Cohen's d-value is:

$$d = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2 + s_2^2}{2}}}$$

where the numerator represents the difference between the means of the two samples, and the denominator gives a pooled standard deviation.

For the repeated measure ANOVA, statistical significance was established by calculating the Wilks' Lambda values, F-values and p-values, using SPSS. Practical significance (effect size) was calculated using multivariate partial eta square values, where 0.01 was regarded as a small effect, 0.06 as a medium effect and 0.14 or higher as a large effect (Cohen, 1989:17; Pallant, 2010:263). Descriptive statistics (mean values and standard deviations) were also reported to establish whether there was skills development between the pre- and post- tests and between the retrospective pre- and post-tests.

For comparisons between different demographic groups, it was decided to compare the learning and skills development scores between those participants that attended block-release classes (where the entire syllabus is presented in two weekends) and those that attended fortnightly

classes. Comparisons were also made between responses for participants that work in the public sector and those that work in the private sector, between those that attended all the contact sessions versus those that missed one or more sessions, and between those that had attended another course in the same subject during the semester preceding the intervention and those that did not attend the said course.

The final quantitative test was to establish whether there is a relationship between the different generic skills (including subject-learning). For this purpose, Pearson product-moment correlation coefficients were calculated, using SPSS. All these analyses are reported in chapter 7, in paragraph 7.3.

6.7.4 Qualitative process.

6.7.4.1 Instrument design

Keeping in mind that the purpose of the study was to see whether the different elements of engaged learning lead to improved subject learning and whether the approach develops selected graduate attributes, the design of the instrument was done in two stages: general reflection (done at the end of the semester) and specific reflection (done continuously during the semester).

The purpose of the qualitative investigation was:

- To investigate whether the primary methods employed during the engaged learning strategy (as independent variables) did lead to improved learning, development of generic skills and impact (as dependent variables) through the experience of participants. The first focus was, therefore, to investigate the linkages between these main constructs.
- To investigate the mechanisms existing within each of the constructs, in the case of those constructs where the available data is sufficient to suggest such a mechanism. From the experience of participants, it was endeavoured to identify how community, workplace and classroom engagement would lead to improved learning and how learning and the development of each of the generic skills are influenced by the different engagement elements.
- By understanding the mechanisms present, it would be possible to identify on which element of the engaged learning strategy the main focus needs to be during any future implementation of the strategy.

To test the overall strategy, participants were asked to reflect at the end of the intervention on the value of the semester in terms of learning and skills development. They were given carte blanche

in terms of what they wanted to include, and their reflections were intended to analyse the strategy given in Figure 5-3. This was done on a template, but the template simply had the briefing (“reflect on your experience in this module”) and room for their unique code (only known to the participant), so that their responses could be compared to the quantitative results, should the need arise.

To delve deeper into the mechanisms involved, participants were asked to complete reflection sheets at the end of each contact session, in which the specific elements of engaged learning were gauged, as well as their attainment of specific graduate attributes. These were completed on a template to elicit the necessary information. Attachment 4 gives the complete set of templates for these specific reflections. The general reflection reports were also used in this analysis.

The templates used in this phase of the data collection (template-based specific reflection) also had a second purpose. Skills develop when they are being practised (Avolio, 2015:13), especially when being reflected on while practising them (Swanwick *et al.*, 2014:167). The templates for reflection on specific skills were designed to serve this purpose: making students think about whether / how they use specific skills and about what they need to do differently to develop these skills. Responses on their planned use of these generic skills were used with caution in the data analysis so as not to confuse their actual attainment of generic skills with their intent.

On each reflection form, there was also space for the participants to provide their unique codes. Again, this was done in case it would be necessary to compare the quantitative and qualitative responses per participant. Not all participants supplied their unique codes all the time, and these reflection forms were then labelled as “Anon”.

All capturing and analysis of the data collected were performed after the end of the course when it could not affect the performance of the respondents in their MBA studies. Data were captured and analysed using Atlas.TI software.

6.7.4.2 Data collection

Data collection took place in real time. At the beginning of the intervention, even before the strategy for engaged learning was introduced, participants completed a form where they introduced themselves, their work environment, provided background information about themselves (i.e. this form was *not* anonymous) and they shared their expectation for the semester with the lecturer. A summary of the participants’ expectations was then listed in a single MS Word document, included in Atlas.TI and used to draw conclusions on whether the expectations of

participants were met. Since the expectation forms were not anonymous, this information was not used for any further data analysis.

General reflection forms were completed at the end of the semester. On these forms, participants could share anything about their experience of the engaged learning strategy, including the community engagement project, the workplace engagement project, classroom engagement activities, the learning that took place, their development of generic skills and any other experience they wanted to share. The length of these reflections varied between one short paragraph and three pages. The general reflection forms were anonymous and could be submitted in one of three methods: as a hard copy, through the learning management system (LMS) or as part of their final portfolio of evidence, as described in paragraph 5.3.6.2. Although they were encouraged not to use the latter method (as it would mean that the name and the unique code of the respondent could be linked and could be known to the researcher), some still preferred to hand in their final reflection as part of their final portfolio of evidence. To ensure anonymity, all responses were copied and pasted into a single MS Word document to anonymise their reflections, and the anonymised document was then used for coding and data analysis.

Specific reflection forms were completed on templates at the end of each of the eight contact sessions. They were anonymous, with space for the respondent's self-constructed secret code. Each of these reflection forms related to one of the engagement activities experienced during the semester, as well as one of the generic skills included in the study, and the timing of these coincided with the introduction of the specific engagement element being reflected on (i.e. when classroom group discussions were first introduced, participants had to reflect on their experience of these classroom discussions).

For analysis purposes of the success of the total engaged learning strategy, only the final reflection forms, those that were recorded at the end of the intervention, were used, but for the analysis of the mechanisms involved in each of the elements of the engaged learning strategy, data from the reflection forms collected during the course of the intervention were also included.

6.7.4.3 Validity and reliability

The selection of a method was complicated by the fact that the primary researcher is also involved in the teaching of participants. Research methods, where primary face-to-face contact with participants would be used to collect information, could, for ethical reasons, not be employed (McKim, 2017:220). Indirect methods had to be used, and the decision was made to collect

information through anonymous reflection reports and use content analysis to analyse the data (Vaismoradi *et al.*, 2016:108).

The study and the instruments were introduced to the participants by an independent expert to ensure that no unethical undue pressure was exerted on the participants. All participants completed an informed consent form. The research ethics process was commensurate with the legally approved research ethics process, as executed by the North-West University and the EduREC research ethics committee was satisfied that the study conformed to all research ethics principles.

Some respondents requested feedback on their personal skills development during the semester. For this purpose, as well as for the purpose of comparing the quantitative and qualitative data per respondent, participants were requested to compile the unique six-letter identification code mentioned above, consisting of the first and last letter of their birthplace, the first and last letter of their mother's maiden name, and the first and last letter of their father's first name. There was space on the initial and final questionnaires, as well as on each of the reflection templates provided (except for the initial student expectations, which were collected before the study was introduced for the sake of unbiasedness).

The above-described summary of the method will be the object of the discussion of the validity and reliability of the qualitative study.

6.7.4.4 Validity of qualitative results

In qualitative research, validity means “appropriateness” or “trustworthiness” of the tools, processes and data (Elo *et al.*, 2014:8). This includes an analysis of whether the research objectives are valid for the desired outcome, whether the method is appropriate for the research objectives, whether the design fits the methodology, whether the data collection and analysis are suitable for the design and whether the conclusions are valid for the context (Leung, 2015:325).

To establish validity, Leung (2015:325) advocate that a number of questions are asked and maintains that, should the answers form a coherent unit, it would suggest validity. These questions are given in italics and answered below, and a judgement call is made on the implication of each answer on the validity of the research.

Ontology: What is the researcher's view of who is being studied? The study focuses on a strategy for engaged learning in an MBA programme. Therefore, the view of the participants in the study is that they are adults, as already described in the section on andragogy (par 2.3.1). As such,

they are self-sufficient, autonomous and motivated, with a quest for relevant knowledge. This also implies that they would be equipped to give informed views on what they have learned and experienced.

Epistemology: How does the educational view fit with the ontology? The present study is mainly based on the principles of constructivism, as described in chapter 2, paragraph 2.7, with other epistemologies also featuring to a lesser extent. This fits in with the ontological view of the participants as adults, who can construct their own knowledge.

What is the desired outcome of the study? The study is about formulating, implementing and testing a strategy for engaged learning in an MBA programme. The desired outcome is, therefore, to be able to prove whether the strategy that was designed and implemented results in measurably improved learning. To ensure that this outcome is not limited to a specific subject, the objective of learning is defined not just in terms of subject-related knowledge, understanding and application, but on the cultivation of generic skills that could be used in any environment. This outcome is still commensurate with the ontology and the epistemology.

Is the research objective valid for the desired outcome? The primary research objective, as stated in chapter 1 in paragraph 1.4.1, is to formulate the strategy from a theoretical basis (done in chapters 2-4), to describe the strategy (done in chapter 5), to implement the strategy (also described in chapter 5) and to test whether the strategy indeed results in learning (done in chapter 6 and 7). Successfully testing the strategy would achieve the desired outcome of the study. Up to this point, the reasoning on the validity of the qualitative study still follows a logical line, suggesting validity.

Is the choice of the methodology appropriate for the research objective? The methodology chosen for this study is mixed methods, where a primary quantitative study was triangulated with a qualitative study. This choice was informed by several factors, as stated in paragraph 6.5. The desire to gauge the real value that the strategy for engaged learning gives to participants needed more than a positivist, questionnaire-based enquiry, but involved a process of understanding the deeper experiences and perceptions of participants and to describe the mechanisms through which the strategy enables learning. Having the primary quantitative method supported by a qualitative study, is perfectly suitable for this, especially since the smallish group size could restrict the validity of the results, had only a quantitative methodology been used. The use of a QUANT/qual mixed method research design to ensure validity is sufficient evidence that the methodology is appropriate to support the research objectives.

Is the design valid for the methodology? The design that was chosen for the qualitative portion specifically involved content analysis of reflection reports, rather than other qualitative methods. This method was selected because of the possible power relationship between the researcher (as the lecturer) and the participants (as students), which would exclude face-to-face methods such as interviews or focus groups, as stated above. These reflection reports were completed at the beginning (stating expectations), consistently during (gathering detailed information) and at the end (getting an overview) of the intervention. Conclusions on the overall learning taking place during the strategy, are derived from the final overview reflection reports, and conclusions on the mechanisms involved during the implementation of the study, also included the detailed reflection reports gathered during the intervention. This ensured a balanced view. The whole study population (a single MBA group) has been included, and no sampling took place that could skew data. It can be concluded that the design of the qualitative portion does support the methodology.

Is the data analysis appropriate for the design? For the qualitative portion, data analysis has been transcribed and coded using Atlas.TI 8.3 software. The coding process is described in detail in paragraph 6.7.4.6. Some of the analytical tools available in Atlas.TI have been used to identify linkages between codes and to draw conclusions based on these linkages. This analysis process was thus done using a scientific analysis process.

Are the results and conclusions valid for the whole context? All qualitative findings are supported by quotes from the reflection reports, shown in Attachment 20. Only those conclusions of the study that could be drawn from the findings are documented. Conclusions refer back to the original research objective. The logical line of reasoning is maintained to suggest validity.

The answers to the above questions follow a logical sequence. From this, it could be concluded that the study design would give valid results.

Regarding the traditional definitions of validity, which refers to the “trustworthiness” of the results, the following measures have been taken to ensure validity. Trustworthiness could be regarded as a combination of credibility, dependability, confirmability, transferability, and authenticity (Elo et al., 2014:8). Referring to these concepts, the following measures have been taken to ensure the trustworthiness of the results:

Credibility refers to how accurately the experiences are depicted (Cypress, 2017:260; Neuendorf, 2016:204). The first measure that was taken to establish credibility was to give participants carte blanche in terms of what to write in their overall final reflection report and to use only these final reflections for the main qualitative findings. Also, although saturation was achieved midway during

the capture of each of the reflection sheets, all the reflection sheets in a set (even those that went beyond saturation) were captured and included in the analysis to ensure credibility. The logic for doing this is as follows: If participants from all three sites of delivery did not experience the implementation of the strategy similarly, it could mean that the pile of reflection sheets consists of three different subsets of reflection sheets on one pile, since the reflection sheets were collected per site. Should capturing stop after saturation, it could be possible that saturation was achieved for one of the sites, and that two other viewpoints are therefore ignored. Continuing capturing and analysis until all the reflection sheets are captured, would dispel this possible inaccuracy. Also, all participants were students that were exposed to the engaged learning strategy and as such, had first-hand experience of the strategy. Finally, the inclusion of a pre/post design (combined with a retrospective pre/post design) and the exclusion of a control group added to this credibility, as a control group would not have been exposed to the engaged learning strategy and would therefore not be able to give an opinion on the research topic.

Dependability is closely related to the quantitative concept of reliability (Cypress, 2017:261). The data is dependable, because participants completed the reflection forms on the total student experience directly after the intervention (when no memory loss on the issues being reported on has set in yet). Also, data on the mechanisms of the different elements of the engaged learning strategy were collected in real time, directly after participants have been exposed to these elements. The data could be depended on to be accurate, real-time and recent. All reflection forms were anonymous so that the data would be unbiased.

Confirmability refers to whether the qualitative data collected is internally coherent (Zhang *et al.*, 2016:323). The fact that the quantitative and qualitative portions of the questionnaire support each other is sufficient proof of the confirmability of the data collected.

Transferability: Although the title is “A strategy for engaged learning in an MBA programme”, the concept of learning included in this title does refer to not only subject-related learning, but also the acquisition of generic skills. In the delimitation done in chapter 1, paragraph 1.8, it is stated explicitly that the research is carried out in a single face-to-face MBA Operations Management class, but that the strategy would be just as valid for any MBA course with a practical component. For the sake of the study, applicability to online courses has explicitly been excluded. Although subject-related learning might not be transferable to other MBA groups and other courses, and even other target groups (undergraduate or non-MBA), the inclusion of generic skills is intended to render the results transferable: Generic skills are not limited to one MBA course, to the MBA

programme, to post-graduate studies or even to tertiary studies. The focus on generic skills was deliberately included to improve the transferability of the results of the study.

Authenticity: The data was collected directly from participants who were given the option to complete the reflection reports or not. Since data was collected in real time, it adds to the authenticity of the information. Also adding to the authenticity is the circumstance that the strategy was incrementally developed throughout eight years and that previous year groups also completed similar reflection forms. Although they do not form part of this study, those reflection forms are available for perusal at the author.

6.7.4.5 Reliability of qualitative data

Reliability refers to replicability (Leung, 2015:326), and could include inter-coder congruence. To ensure the reliability of the qualitative data, all coding was personally done by the researcher for the sake of consistency and checked by an independent researcher. The coding process is described in detail in paragraph 6.7.4.6, but the code structure that was used was deliberately chosen to represent the elements of the engaged learning strategy, as shown in Figure 7-3. When transcriptions were coded, open coding was used to match qualitative responses with the original code structure. Later, the number of codes was reduced to eliminate codes that were unused or not representative of the content.

The use of comprehensive data (data capturing and coding happening well beyond saturation until all responses were included), does improve the reliability of the data. Since the qualitative analysis entailed content analysis of reflection reports, it was decided that a point of saturation should be calculated for each document (data set) being analysed. For all documents that were captured, saturation was reached well before all the data was captured. However, for the sake of reliability, the remaining responses were also captured, coded and included in the qualitative analysis. Continuing beyond saturation, therefore, continued to ensure that the data is reliable.

In summary, from the above measures, it can be concluded that the qualitative research gives reliable results.

Finally, the real measure taken to improve both validity and reliability was the triangulation of the qualitative data with quantitative data, and the fact that reliability was established during the quantitative analysis using Cronbach's alpha coefficient for each factor extracted during a factor analysis. Most importantly, the fact that the results achieved during the qualitative and quantitative analysis gave congruent results, as reported in chapter 7, establishes reliability beyond doubt.

6.7.4.6 Coding

All qualitative data was captured in MS Word documents and transferred to Atlas.TI for analysis.

During the first step of the coding process, the structure of the engaged learning strategy, given in Figure 5-3, was used to create several baseline codes. The following codebook structure was established (Capitalisation follows the structure of the codebook, with *MAIN CATEGORIES* given in all capital letters, *Sub-categories* given with the first letter capitalised and *codes* given without capital letters):

MAIN CATEGORIES:

- A_ATTRIBUTES (referring to generic skills)
- B_BENEFITS (referring to benefits experienced as a result of the engaged strategy)
- E_ENGAGEMENT (referring to the engagement elements in the strategy)
- L_LEARNING (referring to any subject-related learning that took place. Expectations was also classified under learning).
- M_MODERATORS (referring to any moderating items, such as family issues)

Sub-categories:

Under A_ATTRIBUTES

- A_Communication
- A_Critical-thinking
- A_Cultural-awareness
- A_Other_skills
- A_Problem-solving
- A_Self-management
- A_Teamwork

Under B_BENEFITS

- B_Attitude
- B_Business
- B_Career
- B_Personal

Under E_ENGAGEMENT

- E_Classroom
- E_Community
- E_Personal
- E_Workspace

Under L_LEARNING

- L_Expectations
- L_Learning

Under M_MODERATORS

- M_Family
- M_Work
- M_Other_MBA

Under each sub-category the codes were listed, such as the following examples (and this list is not comprehensive):

- A_Communication_listening
- A_Other_leadership
- B_Attitude_community-orientation
- E_Community_sustainability
- E_Workplace_culture
- E_Classroom_group discussions
- L_Expectation_knowledge
- L_Learning_expectations
- M_Family_pressure

The specific codes used for this first phase of coding were taken from the quantitative questionnaire.

Step two of the coding process was open coding of the final reflection reports. This was done until about 25% of the final reflection sheets were captured. When capturing the final reflection reports commenced, open coding was used, and a list of 602 different codes was generated.

Step three was to consolidate the list of codes created using open coding and to merge it with the list of baseline codes created in step one. After almost 25% of the final reflection reports were coded, the two lists of codes were consolidated into the categories described above. In the process, some codes were merged, those codes established during the first step that did not appear in any reflection reports were omitted, and a list of 296 code remained.

The final step in the coding process was to rationalise this list further until 203 final codes remained. This rationalisation also entailed creating some new codes as was deemed necessary during the analysis stage. An abridged version of the final code structure is given in Attachment Attachment 21.

6.7.4.7 Analysis method.

The reflection reports were analysed through content analysis, using Atlas.TI 8.2, and all findings were substantiated by quotations. Attachment 20 gives a brief list of those quotations for each finding that add unique value.

Several themes emerged during the study. Firstly, some general themes about the engaged learning strategy, given in **Error! Reference source not found.**, were investigated. In chapter 7, each theme is documented in a table where the finding is compared with the theoretical evidence, as discussed in previous chapters, and with the empirical proof, given in the list of quotations in Attachment 20. One of the main benefits of qualitative analysis is that it allows the researcher to investigate the available evidence in depth to get a deeper understanding of the content. This was done by proposing a mechanism for each construct investigated from the evidence that emerged during the literature study, in those cases where sufficient qualitative evidence exists to construct such a mechanism.

The feature most commonly used to establish linkages between constructs or between codes was the co-occurrence analysis tool included in Atlas.TI. This method was consistently used. A thorough analysis of causal relationships between different codes was carried out, as described in chapter 7.

6.7.5 Ethics considerations

The study received ethics clearance by the EduREC research ethics committee of the North-West University after a thorough scrutiny of all materials and procedures. The ethics number that was allocated is NWU-00657-18-A2.

6.7.5.1 Quantitative study

The quantitative data collection instrument had to be comprehensive enough to include all the constructs included in the strategy for engaged learning, as depicted in Figure 5-3. This had some implications on the ethics status of the study: Firstly, it is time-consuming. To address the time-consuming nature of the questionnaire, respondents were given fourteen days to complete the questionnaire at their leisure, should they not have wanted to do it in the time provided in class for completion of the questionnaire. Secondly, the instrument was introduced under the supervision of an independent external expert in the field of teaching, and learning and respondents all gave written informed consent. Completing the initial questionnaire was the most awkward phase of the data collection process, as the participants were still unaware that the focus of the course is not just subject-related learning, but also the development of generic skills, which constituted the most substantial portion of the questionnaire. The reassurance that they could withdraw at any stage convinced students to participate. For the final round of the questionnaire, this was not an impediment, since by that time participants could see the value of the strategy for engaged learning, and therefore they willingly participated in completing the (even bulkier) post-test questionnaire.

6.7.5.2 Qualitative study

The qualitative portion of the study consists of content analysis of reflection logs completed by students. The reason for choosing content analysis as the method was to get a deeper understanding of engaged learning without having to resort to methods such as interviews or focus groups that could compromise students as participants. All reflection forms that formed part of the analysis were anonymous (only identified by the unique identification code, chosen by participants to link all their responses to each other). All capturing and analysis of the data collected were performed after the end of the intervention when it could not affect the performance of the respondents in their MBA studies. This was done to remove any effect that the lecturer/student power relationship could have on participants. The qualitative process was also subjected to the ethics approval process and received ethics clearance together with the quantitative study.

6.7.5.3 Special considerations relating to service-learning

Service-learning projects often have unique ethics issues. The service-learning project, which was carried out as part of the engaged learning strategy, deals with community partners, where the nature of the intervention contained in this study is to share management practices with the

management of the organisations and to help them optimise their management. As such the following was done to ensure that the behaviour of all stakeholders in the projects is ethical: When selecting community organisations to work with, a standard letter by the lecturer was given to each community organisation. This letter contains paragraphs on what they can and cannot expect from the students, what the students would need from them, and what the students are willing to do at the organisation. The letter even includes a list of the topics covered during such a project. Community partners returned a registration form where they agreed to take part in the project, based on the conditions stated in the letter. At the start of the project, all community partners were invited to a workshop where the facilitator explains the involvement of the students, what was expected of the community partners and how the students were meant to interact with the organisation. A discussion of ethics in the project was discussed at this workshop, and all questions on ethics by the community partners were addressed. In essence, the community project is low risk, because participants interact with management of community projects, rather than with the direct beneficiaries of community organisations, and because the intervention is not a social one, but deals with management practices.

6.8 Chapter conclusion

The objective of chapters 6 and 7 of this study is to prove that the strategy for engaged learning enables learning and delivers other benefits. In this chapter, the method for doing this was set out, first focusing on the philosophical basis of the study, followed by a scientific process to select a research method that gives valid and reliable results. Validity and reliability have been defined and discussed for both the quantitative and qualitative portions of the research, and the research process was outlined. In chapter 7, the findings of the study are given, and the quantitative and qualitative results are compared, leading to the final conclusion on the feasibility of the strategy for engaged learning in chapter 8.

6.9 Chapter summary

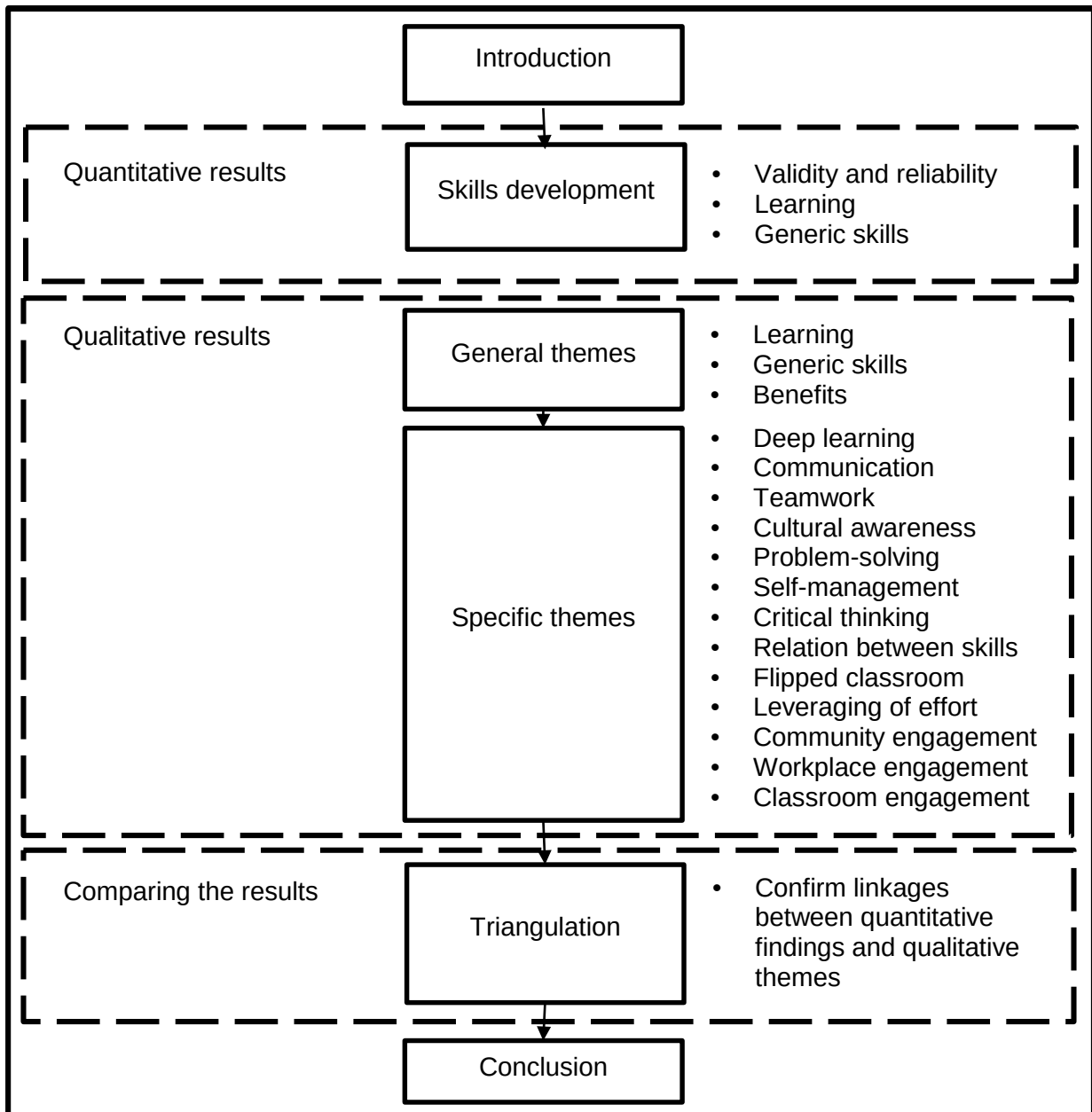
This chapter contains the research method that was employed to evaluate the strategy for engaged learning. Reasons for selecting a QUANT/qual mixed method approach were proposed, and the instruments that were used for data collection was validated. Both the quantitative and qualitative methods have been described in detail.

CHAPTER 7

FINDINGS ON THE SUCCESS OF THE ENGAGED LEARNING STRATEGY

7.1 Introduction

Figure 7-1 Structure of chapter 7



The theoretical phase of the development of the strategy for engaged learning was discussed in chapters 2 to 5, culminating in a description of and an implementation plan for the strategy in chapter 5. Chapter 6 dealt with the research methodology, starting with a brief description of the philosophical basis of the research in paragraph 6.1, followed by the selection of a multi-method approach, where a quantitative study is triangulated with a qualitative study, after considering the benefits and constraints of these two primary research approaches. This triangulation is followed by a description of the research process for both quantitative and qualitative sections of the research.

The results of the research are given in chapter 7, following the structure shown in Figure 7-1. Since the primary goal of the study is to formulate, implement and evaluate a strategy for engaged learning in an MBA programme, the measure of the success of the strategy is learning. Since this learning has been defined as the acquisition of subject content specifically and development of generic skills in general (as a broader definition of learning), the chapter starts with the findings of a quantitative analysis of whether learning did take place during the intervention.

The chapter then continues with a broad description of qualitative support for the causal links between the main variables in the overall engaged learning strategy, as given in Figure 5-3, followed by an in-depth analysis of specific themes that emerged from the qualitative analysis. This is done to understand the mechanisms underlying the links that are proposed in the engaged learning model. For learning, the discussion, based on the qualitative data, first centres around qualitative proof of the learning or skills development that takes place during the intervention, followed by an analysis of the mechanism through which this specific skill is developed through the engaged learning strategy. After discussing learning, some other themes that emerged during the research, such as the relationships between the different generic skills and the role of the flipped classroom, are investigated in a similar way. The final qualitative themes that are expounded are the mechanisms through which each element of the engaged learning strategy adds value.

Finally, the discussion of quantitative results and qualitative results are compared to look for similarities and discrepancies.

7.2 Quantitative results

This section starts with establishing the validity and reliability of the measuring instrument used. Then evidence is provided pertaining to the learning and development of generic skills. The level of generic skills was measured on two occasions. Before the intervention, a baseline was established of the level of generic skills that participants exhibited (a pre-test), and at the end of the intervention the same instrument was used to establish the level of generic skills at the end of the intervention (a post-test), but this was also augmented by a retrospective pre-test to confirm the results of the pre-test (Ebrahimi & Azmi, 2015:850). When capturing the responses from the retrospective pre-test, the label “before” or “bef-” was used to distinguish the questions from the “pre-” or “post”-responses. Table 7-1 shows the structure of the quantitative questionnaire.

Table 7-1 Quantitative test elements

Element	Pre-test (“pre”)	Retrospective pre-test (“bef”)	Post-test (“post”)
Generic skills acquisition	Y	Y	Y
Subject learning	N	Y	Y
Engaged learning strategy elements	N	N	Y

7.2.1 Validity and reliability

The establishment of validity and reliability of the quantitative test was discussed in detail in chapter 6, paragraphs 6.7.3.3 to 6.7.4. The numerical analyses underlying the proof for the validity and reliability of the quantitative findings follows.

7.2.1.1 Factor analysis: All items in post-test included

The test to establish convergent and divergent validity, as discussed in paragraphs 6.7.3.3.5 and 6.7.3.3.6, was to do a principal component factor analysis with direct oblimin rotation on the post-test. This was mainly done to establish whether the questionnaire indeed addressed the different elements of the engaged learning strategy, as indicated in Figure 7-3. The reason for only including the post-test was because this portion of the questionnaire contained all the elements of the engaged learning strategy, all the items about subject learning and all the generic skills (as shown in the last column of Table 7-1), and because analysing the same items for the pre- and retrospective pre-test would not add additional value.

Because the questionnaire was comprehensive and contained a large number of items, it was expected that many factors would be extracted in a factor analysis with no clear cut-off point. This

proved to be the case, and it was decided to analyse the first twenty factors for reliability and to see whether all the elements of the engaged learning strategy appeared amongst these factors.

Because of the small sample size (only 68 of the 141 respondents completed both questionnaires and included their unique codes so that the pre-, retrospective pre- and post-tests could be compared), some issues ensued during the factor analysis. First, there was a large number of missing values, and because of this large number, no pair-wise deletion of missing cases could be done by SPSS, and hence no Kaiser-Meyer-Olkin test of sampling adequacy or Bartlett's test of sphericity could be performed. Since a large portion of the questionnaire items was taken from validated instruments, this was later mitigated by doing separate factor analyses on the collections of items making up each construct. For most of them, KMO-tests and Bartlett's tests could be done. The second issue is that, due to a large number of items in the questionnaire, most factors contained a majority of items referring to one construct, but a few items within that factor were not related to the construct described by the majority of the items in that factor. Those items were retained in the factor when Cronbach's alpha coefficient for that factor was calculated. The final issue was, because the questionnaire was compiled from a number of instruments, two of the generic skills, self-management and teamwork, were described by a rather large number of items, compared to others where there were fewer items available. This was also in line with the nature of those generic skills, as both self-management and teamwork consist of some loosely-related concepts that are grouped under the one name, as described in paragraphs 7.4.2.3 and 7.4.2.4. As expected, for both of these, as well as for communication, more than one factor was extracted. The results of this factor analysis are given in It can be seen from Error! Not a **valid bookmark self-reference**. that the only construct contained in the engaged learning strategy diagram shown in Figure 5-3 that does not appear in the table, is classroom engagement. No statistically satisfactory proof could be found for classroom engagement not being extracted as a separate factor. Hence the items testing classroom engagement were analysed instead. The most probable reason was found to be that classroom engagement consisted of a diverse set of activities, each of which was included as a separate item, and that some of the activities grouped with other closely-related constructs (for example, group discussions appeared amongst teamwork skills, and student presentations appeared amongst the communication skill to share information).

A decision was made (par 6.7.3.2.2) not to include critical thinking, leadership and decision-making in the quantitative analysis, although they were on the list of eight most critical generic skills for MBA students. Decision-making was excluded because it was deemed part of problem-solving, leadership was excluded because leadership is a composite of various other generic skills and critical thinking was excluded because critical thinking is the foundation of many other

generic skills, as seen in Figure 4-5, and, an improvement in these skills would also imply that critical thinking skills have developed. During the intervention, the qualitative analysis proved that critical thinking skills are relevant enough to be included in the engaged learning strategy model, and it was subsequently included in the amended model, seen in Figure 7-3.

Table 7-2 on page 216.

It can be seen from **Error! Not a valid bookmark self-reference.** that the only construct contained in the engaged learning strategy diagram shown in Figure 5-3 that does not appear in the table, is classroom engagement. No statistically satisfactory proof could be found for classroom engagement not being extracted as a separate factor. Hence the items testing classroom engagement were analysed instead. The most probable reason was found to be that classroom engagement consisted of a diverse set of activities, each of which was included as a separate item, and that some of the activities grouped with other closely-related constructs (for example, group discussions appeared amongst teamwork skills, and student presentations appeared amongst the communication skill to share information).

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Table 7-2 Principal component analysis: Post-test

Factor	Description	Cronbach's alpha coefficient
1	Skills development	0.943
2	Benefits	0.819
3	Project approach (Workplace and community)	0.841
4	Community project	0.857
5	Teamwork 1	0.949

6	Cultural awareness	0.935
7	Teamwork exercise	0.869
8	Self-management 1	0.927
9	Subject learning	0.911
10	Workplace project	0.773
11	Moderators	0.709
12	Communication	0.733
13	Community project benefits	0.849
14	Communication 2 (Sharing information)	0.840
15	All generic skills	0.906
16	Moderators 2 (Technology issues)	0.863
17	Problem-solving	0.916
18	Self-management 2 (Psychological issues)	0.781
19	Self-management 3 (Action orientation)	0.901
20	Communication in teams	0.873

7.2.1.2 Factor analysis: Specific constructs

Following the general factor analysis, the individual constructs in the engaged learning strategy were grouped into the items that made up those constructs, and for each of them, a factor analysis was conducted. The results will not be used in further analyses, but for the sake of completeness, they are summarised in

Table 7-3.

Table 7-3 Factor analysis: Specific constructs

Construct	Number of factors (eigenvalues > 1)	Number of factors (cumulative factor loadings > 50%)	Name of factors with alpha>0.7 retained (number of items in brackets)	KMO measure of sampling adequacy	Bartlett's test of sphericity	Cronbach's alpha for specific factors
Communication	5	2	Listening (4)	0.892	p<0.001	0.764
			Sharing information (4)			0.788
			Convincing (5)			0.837
			Logic (4)			0.814
Teamwork	8	2	Team focus (6)	0.846	p<0.001	0.856
			Negative behaviour (8)			0.955

Construct	Number of factors (eigenvalues > 1)	Number of factors (cumulative factor loadings > 50%)	Name of factors with alpha>0.7 retained (number of items in brackets)	KMO measure of sampling adequacy	Bartlett's test of sphericity	Cronbach's alpha for specific factors
			Cooperation (6)			0.864
			Leadership (7)			0.919
			Communication (4)			0.780
			Task focus (4)			0.851
			Togetherness (4)			0.728
			Tension (4)			0.788
Self-management	10	4	Self-control (7)	0.800	p<0.001	0.850
			Goal-behaviour (9)			0.904
			Responsibility (4)			0.768
			Follow-up (4)			0.831
			Information (2)			0.735
			Management (5)			0.862
			Development (3)			0.789
			Focus (3)			0.736
			Self-directed (4)			0.725
Problem-solving	1	1	Problem-solving (8)	0.847	p<0.001	0.864
Cultural awareness	5	2	Behaviour (8)	0.894	p<0.001	0.922
			Cultural knowledge (5)			0.886
			Family issues (6)			0.886
			Cultural systems (6)			0.925
			Interaction (5)			0.756
Learning	5	2	Bigger picture (7)	0.915	p<0.001	0.897
			Systems (6)			0.837
			Understanding (5)			0.831
			Application (4)			0.795
Community engagement project	10	5	Constraints (5)	0.766	p<0.001	0.821
			Hands-on (6)			0.782
			Group work (5)			0.712
			Experience (4)			0.827
Workplace engagement project	10	5	Benefits (8)	0.759	p<0.001	0.869
			Info sources (4)			0.754
			Time issues (5)			0.801
Classroom engagement activities	10	6	Practical involved (9)	0.758	p<0.001	0.861
			Flipped classroom (6)			0.834
			Textbook (2)			0.833
			Sharing (7)			0.832

Construct	Number of factors (eigenvalues > 1)	Number of factors (cumulative factor loadings > 50%)	Name of factors with alpha>0.7 retained (number of items in brackets)	KMO measure of sampling adequacy	Bartlett's test of sphericity	Cronbach's alpha for specific factors
Benefits	13	5	Personal change (2)	0.886	p<0.001	0.851
			Community Sustain (4)			0.836
			Workplace change (6)			0.779
Moderators	20	6	Cross-knowledge (2)	0.664	p<0.001	0.724
			Tech communication (2)			0.828
			Family			0.685

Note, only those factors where Cronbach's alpha coefficient was above 0.7 have been reported in

Table 7-3. The results shown in It can be seen from **Error! Not a valid bookmark self-reference.** that the only construct contained in the engaged learning strategy diagram shown in Figure 5-3 that does not appear in the table, is classroom engagement. No statistically satisfactory proof could be found for classroom engagement not being extracted as a separate factor. Hence the items testing classroom engagement were analysed instead. The most probable reason was found to be that classroom engagement consisted of a diverse set of activities, each of which was included as a separate item, and that some of the activities grouped with other closely-related constructs (for example, group discussions appeared amongst teamwork skills, and student presentations appeared amongst the communication skill to share information).

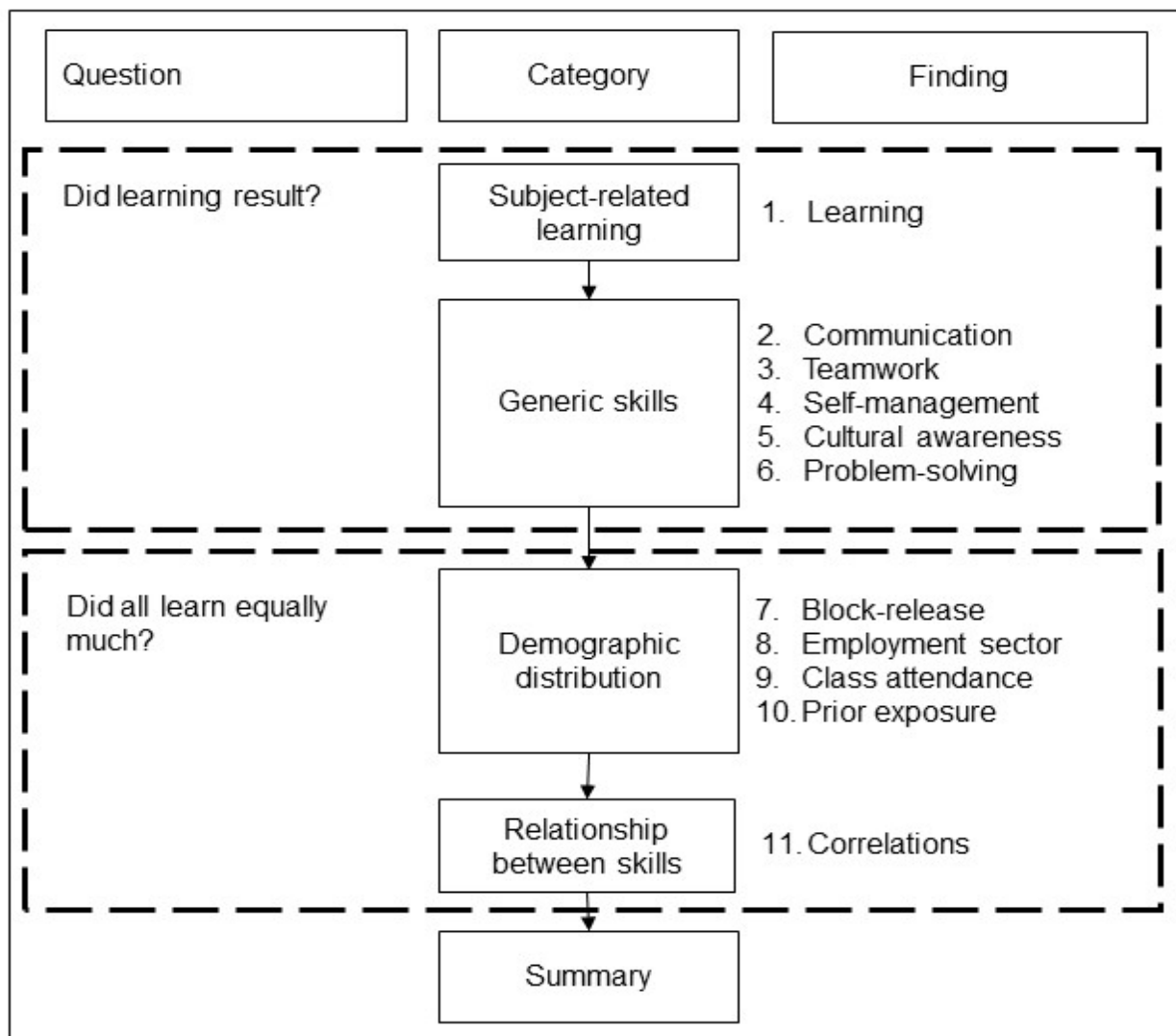
A decision was made (par 6.7.3.2.2) not to include critical thinking, leadership and decision-making in the quantitative analysis, although they were on the list of eight most critical generic skills for MBA students. Decision-making was excluded because it was deemed part of problem-solving, leadership was excluded because leadership is a composite of various other generic skills and critical thinking was excluded because critical thinking is the foundation of many other generic skills, as seen in Figure 4-5, and, an improvement in these skills would also imply that critical thinkings skills have developed. During the intervention, the qualitative analysis proved that critical thinking skills are relevant enough to be included in the engaged learning strategy model, and it was subsequently included in the amended model, seen in Figure 7-3.

Table 7-2 and

Table 7-3 will not be further used in this analysis, but was supplied to prove that the measuring instrument indeed gives valid and reliable results.

7.3 Quantitative findings

Figure 7-2: Structure of qualitative findings



For the comparison of pre-, retrospective pre- and post-tests, a new variable was defined for each of the constructs in the pre-, retrospective pre- and post-tests by calculating the mean score of those items making up that construct. These new variables were used for paired sample t-tests and ANOVAs. In all cases, the retrospective pre-test is indicated as “bef” (representing “before”).

Statistical significance was established by calculating the p-value during the t-tests or ANOVAs, and practical significance was established by calculating the effect size.

The structure of the quantitative findings is given in Figure 7-2 above.

7.3.1 Quantitative finding 1: Development of subject learning

One of the dependent variables in the engaged learning strategy is that it needs to ensure that learning of subject material takes place. It was statistically proven that learning did ensue during the intervention.

Table 7-4: Quantitative finding: Development of subject-learning

Finding	Theoretical support
For subject-related learning, the retrospective pre-test and the post-test were compared using paired sample t-tests to evaluate the impact of the intervention on learning of subject-related knowledge (Pallant, 2013:243). There was a statistically significant increase in learning scores between the retrospective pre-test (Mean = 2.25, SD = 0.66) and the post-test (Mean = 4.10, SD = 0.42), $t(97) = 25.21$, $p < 0.001$ (two-tailed). The mean increase in learning scores was 1.85, with a 95% confidence interval ranging from 1.70 and 1.99. The eta squared statistic (0.87) indicated a very large effect size. Cohen's $d = 3.34$ confirming this very large effect size. The decrease of 0.73 in the standard deviation indicates that the initial spread in the knowledge of subject principles decreased during the intervention as students gathered a common understanding of the subject. It can be inferred that learning did take place during the intervention.	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Experiential learning: Paragraph 3.3.1

7.3.2 Quantitative finding 2: Development of communication skills

Learning also includes the development of generic skills. Communication is one skill that was found to develop measurably.

Table 7-5: Quantitative finding: Development of communication skills

Finding				Theoretical support
A one-way repeated measure ANOVA was conducted to compare the level of communication skills for the pre-test, the retrospective pre-test and the post-test. The means and standard deviations are presented below. There was a significant effect for the three measurements, Wilks' Lambda = 0.385, F (2, 68) = 52.78, p< 0.001, multivariate partial eta squared = 0.615. This indicates a very large effect size, showing that communication skills did indeed develop, measured both in terms of the difference between the pre-test and the post-test and between the retrospective pre-test and the post-test. The descriptive statistics show that communication skills have developed, irrespective of whether the pre-test or the retrospective pre (bef)-test was used as a baseline.				Generic skills: Paragraph 4.3 Communication skills: Paragraph 4.3.1
Descriptive Statistics	Mean	Std. Dev	N	
Pre_Communication	4.0013	0.33027	68	
Bef_Communication	3.9165	0.31343	68	
Post_Communication	4.2515	0.39840	68	
Communication skills were also tested using a practical test where participants were rated in a group exercise before (pre-test) and after (post-test) the intervention. The results were compared using a paired-sample t-test, and the results are as follow: There was a statistically significant increase in communication skills test scores between the pre-test (Mean = 4.01, SD = 0.52) and the post-test (Mean = 4.41, SD = 0.46), t (97) = 5.00, p < 0.001 (two-tailed). The mean increase in communication scores was 0.40 with a 95% confidence interval ranging from 0.24 and 0.56. The eta squared statistic (0.21) indicated a medium effect size. Cohen's d = 0.81 indicates that this is a large effect size. The decrease of 0.66 in the standard deviation indicates that the initial spread in communication skills levels between participants decreased during the intervention. The difference between the communication skill exercise and the communication skills responses on the questionnaires is therefore practically significant.				

7.3.3 Quantitative finding 3: Development of teamwork skills

Through the engaged learning strategy, it was found that participants reported a visible development of teamwork skills.

Table 7-6: Quantitative finding: Development of teamwork skills

Finding				Theoretical support
A one-way repeated measure ANOVA was conducted to compare the level of teamwork skills for the pre-test, the retrospective pre-test and the post-test. The means and standard deviations are presented below. There was a significant effect for the three measurements, Wilks' Lambda = 0.294, $F(2, 68) = 79.187$, $p < 0.001$, multivariate partial eta squared = 0.706. This indicates a very large effect size, showing that teamwork skills did indeed develop, measured both in terms of the difference between the pre-test and the post-test and between the retrospective pre-test and the post-test. The descriptive statistics show that teamwork skills have developed, irrespective of whether the pre-test or the retrospective pre- (bef)-test was used as a baseline.				Generic skills: Paragraph 4.3 Teamwork skills: Paragraph 4.3.2
Descriptive Statistics		Mean	Std. Dev	N
Pre_Teamwork		3.7163	0.32066	68
Bef_Teamwork		3.6444	0.29580	68
Post_Teamwork		4.1587	0.41165	68
Teamwork skills were also tested using a practical test where participants were rated in a group exercise before (pre-test) and after (post-test) the intervention. The results were compared using a paired-sample t-test, and the results are as follow: There was a statistically significant increase in teamwork skills scores between the pre-test (Mean = 4.18, SD = 0.43) and the post-test (Mean = 4.46, SD = 0.54), $t(97) = 3.52$, $p < 0.001$ (two-tailed). The mean increase in teamwork skills scores was 0.28 with a 95% confidence interval ranging from 0.12 and 0.44. The eta squared statistic (0.11) indicated a small effect size. Cohen's $d = 0.057$ indicates that this is a medium effect size. The decrease of 0.66 in the standard deviation indicates that the initial spread in teamwork skills levels between participants decreased during the intervention. The difference between the teamwork skill exercise and the teamwork skills responses on the questionnaires has, therefore, medium practical significance.				

7.3.4 Quantitative finding 4: Development of self-management skills

Through the engaged learning strategy it was found that participants reported a visible development of self-management skills.

Table 7-7: Quantitative finding: Development of self-management skills

Finding				Theoretical support
A one-way repeated measure ANOVA was conducted to compare the level of self-management skills for the pre-test, the retrospective pre-test and the post-test. The means and standard deviations are presented below. There was a significant effect for the three measurements, Wilks' Lambda = 0.270, $F(2, 68) = 89.110$, $p < 0.001$, multivariate partial eta squared = 0.730. This indicates a very large effect size, showing that self-management skills did indeed develop, measured both in terms of the difference between the pre-test and the post-test and between the retrospective pre-test and the post-test. The descriptive statistics show that self-management skills have developed, irrespective of whether the pre-test or the retrospective pre (bef)-test was used as a baseline.				Generic skills: Paragraph 4.3 Self-management: Paragraph 4.3.6
Descriptive Statistics		Mean	Std. Dev	N
Pre_Self-management		4.1114	0.27793	68
Bef_Self-management		3.5077	0.60443	68
Post_Self-management		4.3221	0.36299	68

7.3.5 Quantitative finding 5: Development of cultural awareness skills

Through the engaged learning strategy, it was found that participants reported a visible development of cultural awareness skills.

Table 7-8: Quantitative finding: Development of cultural awareness skills

Finding				Theoretical support
A one-way repeated measure ANOVA was conducted to compare the level of cultural awareness skills for the pre-test, the retrospective pre-test and the post-test. The means and standard deviations are presented below. There was a significant effect for the three measurements, Wilks' Lambda = 0.435, $F(2, 68) = 42.916$, $p < 0.001$, multivariate partial eta squared = 0.565. This indicates a very large effect size, showing that cultural awareness skills did indeed develop, measured both in terms of the difference between the pre-test and the post-test and between the retrospective pre-test and the post-test. The descriptive statistics show that cultural awareness skills have developed, irrespective of whether the pre-test or the retrospective pre (bef)-test was used as a baseline.				Generic skills: Paragraph 4.3 Cultural awareness: Paragraph 4.3.8
Descriptive Statistics	Mean	Std. Dev	N	
Pre_Cultural awareness	3.8011	0.44897	68	
Bef_Cultural awareness	3.3546	0.63394	68	
Post_Cultural awareness	3.9625	0.59843	68	

7.3.6 Quantitative finding 6: Development of problem-solving skills

Through the engaged learning strategy, it was found that participants reported a visible development of problem-solving skills.

Table 7-9: Quantitative finding: Development of problem-solving skills

Finding				Theoretical support
A one-way repeated measure ANOVA was conducted to compare the level of problem-solving skills for the pre-test, the retrospective pre-test and the post-test. The pre-test was taken before the intervention and the retrospective pre- and post-tests after the intervention. The means and standard deviations are presented in the table below. There was a significant effect for the three measurements, Wilks' Lambda = 0.365, $F(2, 68) = 55.675$, $p < 0.001$, multivariate partial eta squared = 0.635. This indicates a very large effect size, showing that problem-solving skills did indeed develop, measured both in terms of the difference between the pre-test and the post-test and between the retrospective pre-test and the post-test. The descriptive statistics show that –solving skills have developed, irrespective of whether the pre-test or the retrospective pre (bef-)test was used as a baseline.				Generic skills: Paragraph 4.3 Problem- solving: Paragraph 4.3.4
Descriptive statistics	Mean	Std. Dev	N	
Pre_Problem-solving	4.1080	0.41480	68	
Bef_Problem-solving	3.4508	0.77487	68	
Post_Problem-solving	4.2614	0.43618	68	
The pre-post practical problem-solving test did not yield a significant improvement in problem-solving skills and is therefore not reported.				

7.3.7 Quantitative finding 7: Effect of fortnightly versus block-release classes on learning

The strategy works as well for a block-release mode of delivery as for fortnightly contact sessions.

Table 7-10: Quantitative finding: Effect of mode of delivery on learning

Finding	Theoretical support
To determine whether there is a significant difference in the subject-knowledge learning between those students who attended classes every second week and those who received all their tuition in a block-release format during two weekends, an independent sample t-test was carried out to compare the difference in learning scores between participants from the site that received block-release tutoring as one group and participants from the other two sites of delivery for the subjects as a collective other group. Levene's test for equality of variances yielded a significance value of 0.58, and therefore it can be assumed that equal variances can be assumed. For the t-test there was no significant differences in learning scores for block-release students (mean = 1.66, SD = 0.87) and fortnightly contact students (mean = 1.96, SD = 0.63), with $t(95) = 1.908$, $p = 0.06$. There is no statistical difference in the learning experienced between the two modes of delivery. In terms of practical significance, the eta squared value was a very small 0.03, which indicates that there is no practically significant difference between the learning experienced in the two modes of delivery. Cohen's $d = 0.39$ indicates that this is a small effect size. The decrease of 0.66 in the standard deviation indicates that the initial spread in knowledge levels between participants decreased during the intervention. There is low practical significant difference between the learning by participants receiving fortnightly tuition and those that receive theirs in block-release format. A mixed between-within subjects ANOVA was also conducted to assess whether the development of generic skills amongst participants who attended block-release classes experienced a statistically significant difference in skill level than those attending fortnightly classes. For none of the skills (significance levels and eta squared values are given in brackets), a statistically significant difference in learning between the groups was experienced: Communication (0.906, 0.000), teamwork (0.510, 0.007), cultural awareness (0.527, 0.006), self-management (0.887, 0.000) and problem-solving (0.967, 0.000) all reported significance levels greater than 0.05, and hence it can be stated that the development of these generic skills does not differ significantly between these groups, as seen from the very high significance levels and the very low eta squared values for all these skills.	Generic skills: Paragraph 4.3

7.3.8 Quantitative finding 8: Effect of employment sector of students on learning

The subject learning and generic skills development resulting from engaged learning is independent of the employment sector of students.

Table 7-11: Quantitative finding: Effect of employment sector on learning

Finding	Theoretical support
To determine whether there is a significant difference in the subject-knowledge learning between those students who were employed in the private sector versus those employed in the public sector, an independent sample t-test was carried out to compare the difference in learning scores between these groups. Levene's test for equality of variances yielded a significance value of 0.11, and therefore it can be assumed that equal variances can be assumed. For the t-test there was no significant differences in learning scores for public sector students (mean = 2.00, SD = 0.82) and private sector students (mean = 1.74, SD = 0.66), with $t(86) = 1.678$, $p = 0.10$. There was no statistically significant difference in the learning experienced between the two modes of delivery. In terms of practical significance, the eta squared value was a very small 0.03, which indicates that there is no practically significant difference between the learning experienced by the two groups. This was confirmed by a low Cohen's d-value of 0.35, indicating a small practically significant difference in the development of generic skills achieved by private and public sector employees. A mixed between-within subjects ANOVA was conducted to assess whether the development of generic skills amongst participants employed in the private sector experienced a statistically significant difference in skill level than those employed in the public sector. For none of the skills (significant levels and eta squared values are given in brackets), a statistically significant difference in learning between the groups was experienced: Communication (0.471, 0.024), teamwork (0.190, 0.051), cultural awareness (0.651, 0.014), self-management (0.446, 0.025) and problem-solving (0.134, 0.064) all reported significance levels greater than 0.05, and hence it can be stated that the development of these generic skills does not differ significantly between these groups, as seen from the very high significance levels and the very low eta squared values for all these skills.	Generic skills: Paragraph 4.3

7.3.9 Quantitative finding 9: Effect of class attendance by students on learning

Table 7-12: Quantitative finding: Effect of class attendance on learning

Finding	Theoretical support
To determine whether there is a significant difference in the subject-knowledge learning between those students who attended all the contact sessions and those who missed some contact sessions, an independent sample t-test was carried out to compare the difference in learning scores between participants who attended all sessions and participants who missed some classes. Levene's test for equality of variances yielded a significance value of 0.30, and therefore it can be assumed that equal variances can be assumed. For the t-test there was no significant differences in learning scores for students attending all classes (mean = 1.76, SD = 0.76) and fortnightly contact students (mean = 2.04, SD = 0.65), with $t(96) = 1.814$, $p = 0.07$. There was no statistical difference in the learning experienced between the two groups. In terms of practical significance, the eta squared value was a very small 0.03, which indicates that there is no practically significant difference between the learning experienced in the two groups. This was confirmed by a low Cohen's d-value of 0.39, indicating a small practically significant difference in the development of generic skills achieved by those attending all the classes and those who missed some classes. A mixed between-within subjects ANOVA was conducted to assess whether the development of generic skills amongst participants who attended all the classes experienced a statistically significant difference in skill level than those not attending all classes. For none of the skills (significant levels and eta squared values are given in brackets), a statistically significant difference in learning between the groups was experienced: Communication (0.575, 0.005), teamwork (0.618, 0.004), cultural awareness (0.666, 0.003), self-management (0.451, 0.009) and problem-solving (0.894, 0.000) all reported significance levels greater than 0.05, and hence it can be stated that the development of these generic skills does not differ significantly between these groups, as seen from the very high significance levels and the very low eta squared values for all these skills.	Generic skills: Paragraph 4.3 Student classroom engagement: Paragraph 3.3.7 Effect of learning methods on generic skills: Paragraphs 3.3.1 and 3.6.1

7.3.10 Quantitative finding 10: Effect of prior exposure to the subject on learning

Comparison between participants with prior exposure to the subject and those without such exposure revealed, there was a statistically and practically significant difference between the two groups. This finding needs some contextualisation: To be allowed to the MBA course in South Africa where the study was carried out, one of the requirements is a prior qualification at honours

degree level. The students with exposure to the subject the semester before the intervention, therefore, needed to complete a Post-Graduate Diploma in Management to be able to enter the MBA programme. Those who reported that they did not have exposure during the previous semester, all had either a four-year undergraduate degree or an honours (or higher) degree.

Table 7-13: Quantitative finding: Effect of prior subject exposure on learning

Finding	Theoretical support
To determine whether there is a significant difference in the subject-knowledge learning between those students with prior knowledge of the subject, the sample was divided into those respondents who had attended a course in operations management the year before their exposure to the engaged learning strategy and those who did not attend the course the previous year, an independent sample t-test was carried out to compare the difference in learning scores between participants from the two groups. Levene's test for equality of variances yielded a significance value of 0.198, and therefore it can be assumed that equal variances can be assumed. For the t-test there was a significant difference in learning scores for students who has completed a course in operations management the year before (mean = 1.69, SD = 0.76) and students who did not complete the operations management course the year before (mean = 2.02, SD = 0.68), with $t(93) = 2.241$, $p = 0.03$. There was a statistically significant difference in the learning experienced between the group who had prior exposure and the group that did not, with the group not attending a previous course in the subject achieving more learning than those who did attend the previous course. In terms of practical significance, the eta squared value was a very small 0.05, which indicates that there is no practically significant difference between the learning experienced in the groups. This was confirmed by a low Cohen's d-value of 0.45, indicating a small practically significant difference in the development of generic skills achieved by those attending all the classes and those who missed classes.	Generic skills: Paragraph 4.3

Finding	Theoretical support
A mixed between-within subjects ANOVA was conducted to assess whether the development of generic skills amongst participants who attended a course in operations management the year before the intervention was different from those who did not attend such a course. For all of the skills (significant levels and eta squared values are given in brackets), a statistically significant difference in skill development between the groups was experienced: Communication (0.050, 0.116), cultural awareness (0.037, 0.125), self-management (0.013, 0.157) and problem-solving (0.026, 0.140) all reported significance levels less than 0.05, and hence it can be stated that the development of these generic skills differs significantly between these groups, as seen from the low significance levels. The practical significance, however, was not high, as seen from the low eta squared values for all these skills. One skill shows neither statistical nor practical significance in the difference between these two groups, namely teamwork (0.543, 0.042).	Generic skills: Paragraph 4.3

7.3.11 Quantitative finding11: There is a relationship between the generic skills that were developed (including subject learning)

Pearson's correlations were calculated between the different skills developed and between these skills and learning of course material.

Table 7-14: Quantitative finding: Relationship between generic skills

Finding	Theoretical support
To determine whether there is a positive relationship between the development that took place in the different generic skills, Pearson product-moment correlation coefficients were calculated. The variables used for this analysis were the differences in scores between the post-test and the retrospective pre-test for each variable, to measure the development that took place during the intervention. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The amount of learning that took place during the intervention was also included in the analysis, because the development of generic skills is regarded as a generalised definition of learning in this study. Table 7-15 below (not embedded in this table) shows the correlation matrix. All the correlations were positive and significant at the 0.01 level (two-tailed), except for the correlation between teamwork and problem solving ($p = 0.25$), between teamwork and self-management ($p < 0.05$) and between teamwork and learning ($p < 0.05$). Most correlations were strong (indicated in green in Table 7-15), medium (indicated in orange in Table 7-15) or weak (indicated in yellow in Table 7-15). The coefficient of determination varied between 5% and 69%, showing that the different skills do have an effect on each other. As expected, the correlations between learning and the different generic skills were lower than the mutual correlations between the skills.	Generic skills: 4.3

Table 7-15: Correlations between generic skills developed

Correlations						
		Diff_Comm_post_bef	Diff_Team_post_bef	Diff_Self_post_bef	Diff_CA_post_bef	Diff_problem_post_bef
Diff_Team_post_bef	Pearson Correlation	.564**				
	Sig. (2-tailed)	0.000				
Diff_Self_post_bef	Pearson Correlation	.536**	.234*			
	Sig. (2-tailed)	0.000	0.020			
Diff_CA_post_bef	Pearson Correlation	.532**	.263**	.831**		
	Sig. (2-tailed)	0.000	0.008	0.000		
Diff_problem_post_bef	Pearson Correlation	.357**	0.118	.812**	.695**	
	Sig. (2-tailed)	0.000	0.247	0.000	0.000	
Learning_Dif	Pearson Correlation	.374**	.253*	.399**	.270**	.227*
	Sig. (2-tailed)	0.000	0.013	0.000	0.008	0.026
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

7.3.12 Summary of quantitative results

From the above, it can be seen that learning of subject principles ensued during the intervention. It is also evident that all of those generic skills that were measured in the questionnaire did indeed develop during the intervention, with no significant difference between different modes of delivery, between the sectors where participants are employed but the difference between the learning and

skills development of students who have attended a course in the same subject the year before, is statistically significant (except for the development of teamwork skills). In the qualitative analysis below these results are explored in detail.

7.4 Qualitative results

Since the quantitative results confirmed that learning had been achieved during the intervention, both in terms of subject knowledge and of generic skills, the question is asked: How does the strategy for engaged learning contribute to this development of knowledge and skills? The qualitative study is an attempt to answer this question in depth. As described in paragraph 6.4.1.2, qualitative research allows the researcher to analyse the topic being analysed through the observations of the participants, in this case, recorded in reflection reports. The summative reflection reports submitted by participants at the end of the intervention allowed participants to reflect on their experience over the whole six-month period, and therefore it carries some weight in terms of a holistic view of their experience during the intervention. When general themes are discussed in paragraph 7.4.1, they are discussed by only using data from the overall final reflection reports. However, during the intervention participants were asked to reflect on specific elements of the engaged learning strategy. In the discussion of specific themes in paragraph 7.4.2, these are also included in the analysis, because they could refer to the topic discussed under the specific themes. A detailed description of how the validity and reliability of the qualitative research were established, was given in paragraph 6.7.4.3.

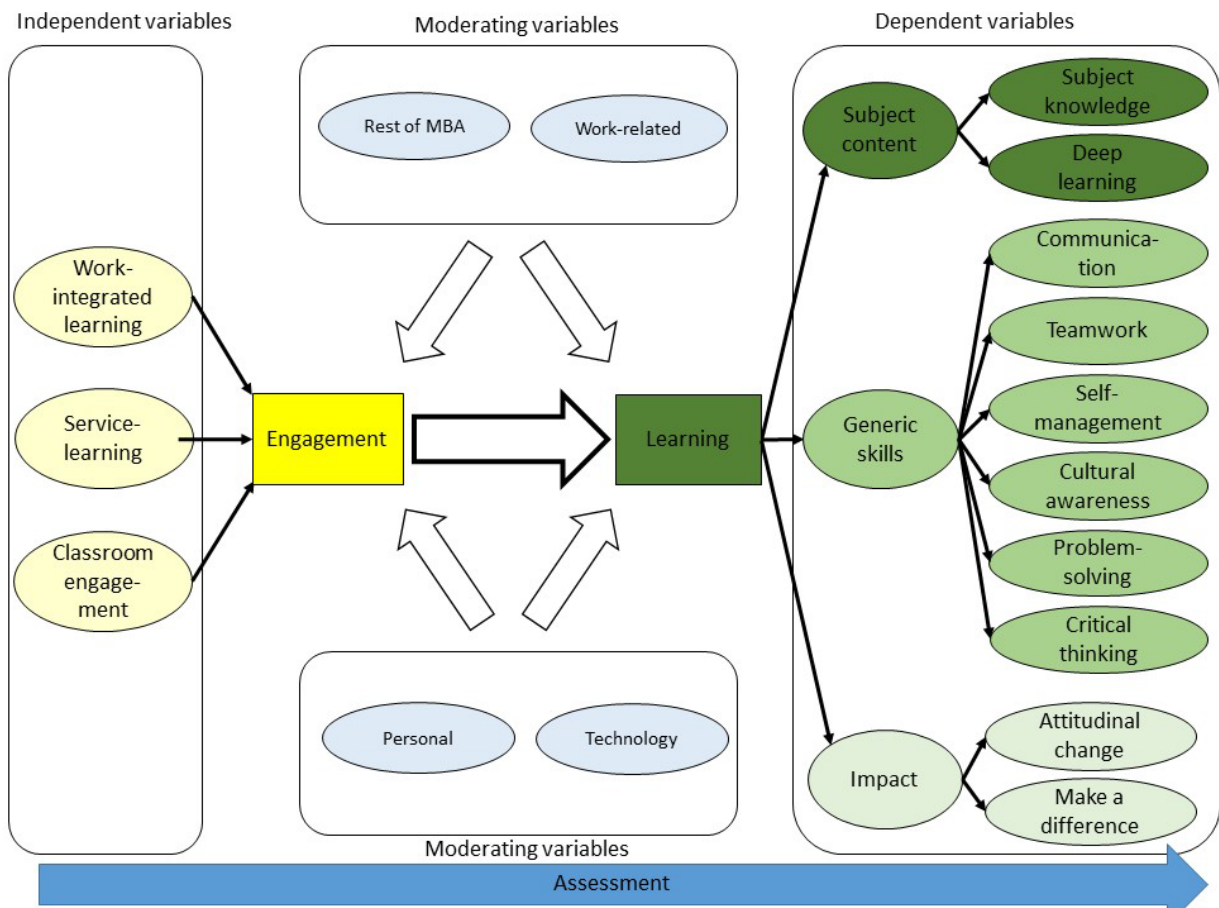
7.4.1 General themes

The general themes represent the analysis to determine possible links between the main constructs in the model, and for these, only the final reflections were used. The construct "personal engagement", as shown as one of the four engagement elements in Figure 5-3, did not appear anywhere in the reflection reports, and was therefore removed from the strategy representing the strategy. The only code that was originally assigned to "personal engagement", that received attention in the reflection reports, was "individual voice feedback", but since this is one of the elements that was introduced as part of the "flipped classroom" approach, it was analysed together with the flipped classroom under the construct "classroom engagement".

One of the three generic skills that was originally excluded from the study is critical thinking (the other being leadership and decision-making). It appeared so often in the qualitative reports that it

was included halfway during the qualitative study. It could not be included in the quantitative study though, as the pre-designed questionnaire did not include any items on critical thinking. However, the model that was investigated in detail in the qualitative study is an adaptation of Figure 5-3, and it is given as Figure 7-3.

Figure 7-3: Amended strategy for engaged learning



Source: Adapted from Figure 6-2

In the final strategy, three engagement elements, workplace engagement (WIL), community engagement (service-learning) and classroom engagement are used to ensure learning. These three are the independent variables. Learning (the dependent variable) can be seen in three constructs: subject content, generic skills and the broader impact that the learning has. Subject content learning does not just acquire subject knowledge, but ensures deep learning (understanding and application). Six generic skills were proven through the research to develop. These are communication skills, teamwork skills, self-management skills, cultural awareness skills, problem-solving skills and critical thinking skills. The impact of learning is mainly seen in an attitudinal change of participants, but also in the actual difference made by participants, both in

the workplace and in the community. A number of moderating variables has an influence on engagement and on learning. The influence of family issues, work issues and participants' involvement in the rest of their MBA act as moderators, and effective learning technology can also be seen as a moderator.

7.4.1.1 General theme 1: The engaged learning strategy enables improved learning of academic subject content

The assumptions of andragogy described in paragraph 2.3 strongly suggest that the engaged learning strategy should lead to improved learning, since MBA students are adult learners. The behaviourist notion that learning results in changed behaviour (par 2.5) and the constructivist idea that knowledge is constructed by the student while engaging (par 2.7) also guided the search for clues as to whether real learning resulted from the engaged learning strategy.

Table 7-16: Qualitative finding: Engaged learning ensures learning

Finding	Empirical support	Theoretical support
There is overwhelmingly positive evidence that improved learning does take place: More than half of the participants cited that improved learning ensued. They do not only refer to the improved learning that took place, but also that the learning involves understanding, application in both the workplace and in participants' private lives and that some of the learning has been passed on to fellow-workers and subordinates in the workplace. Some of the quotations simply referred to the learning that took place, although a large proportion of participants alluded to the notion that the learning that takes place does indeed change behaviour in his or her personal life and in the workplace. Some of the respondents went beyond application in the workplace, but specifically mentioned the notion that the learning method allowed them to understand the "bigger picture" where the subject material is applied in the broader environment in their workplace.	Quantitative analysis: Paragraph 7.3.1 Quotations on learning: Attachment 20.1.1 Quotations on the broader context: Attachment 20.1.2	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Experiential learning: Paragraph 3.3.1
There is ample evidence that the individual workplace engagement project enables learning. In fact, the workplace engagement project seems to be the primary element of the strategy that enables learning: Again the link is very strong, with 40 quotations where the two constructs "workplace" and "learning" overlap.	Quotations are given in Attachment 20.1.3	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Work-integrated learning: Paragraph 3.3.4
There is evidence that the community engagement project leads to learning. Again the link is very strong, with 31 quotes containing "community engagement" and "learning". Although the links with acquisition of knowledge is not paramount, understanding and application of knowledge seem to feature prominently. Most evidence points to the notion that participants learned that the subject contents applies in any kind of organisation, even non-profit organisations.	Quotations are given in Attachment 20.1.3	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Service learning: Paragraph 3.3.3

Finding	Empirical support	Theoretical support
Although the majority of the quotations referred to learning from specific classroom engagement activities, the evidence supports the learning that took place. Many of the participants referred to the active learning that unlocked the knowledge for them so that they could apply it in the workplace and in their private lives.	Quotations are given in 20.1.5	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Experiential learning: 3.3.1 Games and simulations: Paragraph 3.3.6 Student classroom engagement: Paragraph 3.3.7
A number of the respondents referred to the notion that the learning achieved through the strategy for engaged learning goes beyond mere knowledge, but involves a lot of practical application and, hence a deeper understanding of the content and its subject applicability	Quotations are given in Attachment 20.1.6	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Service learning: Paragraph 3.3.3 Work-integrated learning: Paragraph 3.3.4

To determine a possible relationship between the different main elements of the engaged learning strategy and learning, a number of links between codes were investigated using Atlas.TI software. In the following tables, these links are unpacked and linked with the theoretical part of this study. Quotations proving all the qualitative findings are given in Attachment 20.

The first general finding confirms the quantitative finding that the engaged learning strategy enabled learning of subject content. This is confirmed to be a result of both the workplace engagement project, the community engagement project and the classroom engagement activities.

A strong causal relationship between all three elements of the engaged learning strategy and subject-related learning is therefore uncovered by the research. This theme supports quantitative finding 1, described in paragraph 7.3.1, that learning does ensue during the intervention.

7.4.1.2 General theme 2: The engaged learning strategy results in the development of selected generic skills.

Research shown in paragraph 1.3 and chapter 4 presents strong evidence that the objective of learning is not just to acquire subject-related knowledge, but that students should be equipped with "soft skills", also known as generic skills, pervasive skills or graduate attributes that will allow them to succeed in the workplace. A number of these generic skills were identified in paragraph 4.3 as particularly crucial for MBA graduates. The skills that were actively pursued in this intervention (and measured in the quantitative study described in paragraph 7.3) are communication skills, teamwork skills, cultural awareness skills, self-management skills and problem-solving skills, but a number of other skills emerged in the study as also having developed during the intervention. The first of these is critical thinking skills, but leadership skills and decision-making skills are also mentioned. The second general theme that strongly emerged is, therefore, that engaged learning leads to the development of generic skills.

The procedure followed was again to look for overlaps between generic skills and the three different elements of engagement, namely classroom engagement, workplace engagement and community engagement, using Atlas.TI software.

Table 7-17: Qualitative finding: Engaged learning develops generic skills

Finding	Empirical support	Theoretical support
The evidence is overwhelming that participants experienced that their generic skills did develop, and many of them either referred to the development of "soft skills" in general or to the development of specific generic skills. Although "soft skills" as a collective term for generic skills was originally not part of the model, so many participants referred to it that, under the grouping ATTRIBUTES a code A_Other soft skills was created on Atlas.TI.	Quantitative analysis: paragraphs 7.3.2 to 7.3.11 Quotations are given in Attachment 20.2	Generic skills: Paragraph 4.3 Effect of learning methods on generic skills: Paragraphs 3.3.1 and 3.6.1

A summarised list of the number of quotations referring to the development of specific generic skills, together with the three engagement elements is given in Table 7-18. With the exception of cultural awareness, decision-making, planning and to a lesser extent leadership, there is sufficient evidence that respondents mentioned all of these generic skills in conjunction with all three these engagement elements, and it can therefore be reasonably be conjectured that the engaged learning strategy does not only develop the complete set of generic skills, but also specific generic skills.		
There is sufficient evidence that the WIL project did lead to the development of generic skills. Although some specific quotations did not mention the WIL project by name, all the quotations were taken from a discussion of the participants' experience of the WIL project.	Quotations are given in Attachments 20.2.1 and 20.15	Generic skills: Paragraph 4.3 Effect of learning methods on generic skills: Paragraphs 3.3.1 and 3.6.1
Very strong evidence exist that the community engagement project develops generic skills, the community engagement project being the major contributor to generic skills development. Some generic skills are developed more than others through the community project.	Quotations are given in Attachments 20.2.1 and 20.14	Generic skills: Paragraph 4.3
There is adequate evidence that the classroom engagement exercises develop generic skills. Although the specific quotations did not mention the classroom activities, all the quotations were taken from a discussion of the participants' classroom experiences.	Quotations are given in Attachment 20.16	Generic skills: Paragraph 4.3 Effect of learning methods on generic skills: Paragraphs 3.3.1 and 3.6.1

The above are just references to use of generic skills, or "soft skills" as a generic grouping of skills. References to specific skills and their relationships with these three engaged learning variables abound. The numbers of quotations where the different constructs overlap are given in Table 7-18.

Table 7-18: Number of overlaps within quotations between engaged learning elements and specific generic skills

Generic skill mentioned (frequency of times mentioned in total)	Frequency of overlaps between the engagement element and the generic skill		
	Classroom engagement	Workplace engagement	Community engagement
Teamwork (74 times)	26	23	25
Self-management (62 times)	29	18	15
Critical thinking (54 times)	22	16	16
Communication (52 times)	18	19	15
Problem-solving (39 times)	15	13	11
Leadership (23 times)	11	5	7
Planning (17 times)	6	6	5
Cultural awareness (12 times)	8	2	2
Decision-making (9 times)	4	2	3

Although not all the skills develop to the same degree, it can be summarised that the engaged learning does contribute to the development of selected generic skills of participants. This theme supports quantitative findings 2 to 11, described in paragraphs 7.3.2 to 7.3.11, that generic skills developed during the intervention.

7.4.1.3 General theme 3: The engaged learning strategy results in measurable impact on various stakeholders

There is strong research support that all three main elements of the engaged learning strategy do have major benefits to stakeholders. In chapter 3 the benefits of service-learning were said to include a positive effect on the attitude of students towards community issues, some specific benefits accruing to the community partner (the nature of which is depending on the subject discipline being addressed during the project) and student learning that takes place. Similarly, many benefits have been described to accrue from work-integrated learning, depending on the nature of the WIL project. These include business benefits for the organisation where the WIL

project is executed, as well as career benefits for participants. Less has been written on the benefit of classroom engagement activities on students (other than learning), but there is some evidence of attitudinal benefits befalling participants.

Because of this, impact has been described in terms of three constructs, namely attitudinal benefits, the difference made and career benefits. One of the code groups that was established during the research is B_BENEFITS, and this was subdivided into three sub-groups: B_Attitude (whether there has been a change in the attitude of respondents), B_Career (whether the career of respondents benefitted from their exposure to the strategy for engaged learning) and B_Difference (whether the strategy makes any other difference to various stakeholders). These are reported in Table 7-19.

Table 7-19: Qualitative finding: impact of engaged learning strategy on stakeholders

Finding	Empirical support	Theoretical support
The link between workplace engagement and a change in attitude towards the work environment is less noticeable, but not less substantial. There is strong evidence that the workplace engagement project made a difference to the attitude of participants towards their workplace.	Quotations are given in Attachment 20.3.4	Effect of WIL on the attitude of participants: Paragraph 3.3.4.3
Applying the subject content in the workplace yielded some impact on the organisation where the respondents work. These include that participants started challenging the status quo and that they "got their hands dirty" looking for improvement opportunities. This was evident in responses of participants from both private and public sector organisations.	Quotations are given in Attachment 20.3.5	Effect of WIL on the organisation: Paragraph 3.3.4.3
References to personal benefits derived from the workplace engagement project included career benefits: A few respondents referred to the increased visibility that resulted from the workplace project. Improved networking in the workplace was also mentioned as a benefit. Various other less-often mentioned benefits ensued, such as general career benefits.	Quotations are given in Attachment 20.3.6	Personal benefits of WIL on participants: Paragraph 3.3.4.3

Finding	Empirical support	Theoretical support
The community engagement project developed some personal attributes (apart from generic skills, as defined in this study), such as humility, gratefulness and respect, a sense of pride, self-confidence and the willingness to move out of his or her comfort zone. Another major benefit mentioned by a number of participants is the building of relationships.	Quotations are given in Attachment 20.3.3	Personal effect of community engagement on participants: Paragraph 3.3.3.3
There is very strong evidence that the community project has a large impact on the attitude of participants on community engagement. In terms of the effect of the engaged learning strategy on participants' attitudes, the biggest contributor by far is the community engagement project. The community project developed a community orientation, and a large number of participants stated that their relationships with the community organisation will probably be long- lasting.	Quotations are given in Attachment 20.3.1	Effect of community engagement on the attitude of participants: Paragraph 3.3.3.3
The biggest differences made to community organisations are evident in the community engagement group project, where the difference made is in terms of the application of the subject content in the specific organisation and the effect that has on the performance of the organisation. The link between service-learning and difference shows two major areas of overlap: The first benefit describes the benefits to the community organisation, which includes improved management and other business benefits received by the organisation. Another benefit is that participants indicated that they would be involved with the community organisations for a long time.	Quotations are given in Attachment 20.3.2	Effect of community engagement on stakeholders: Paragraph 3.3.3.3

Finding	Empirical support	Theoretical support
The link between classroom engagement and attitude had 20 overlaps. Although the evidence of the attitudinal difference from classroom activities is less compelling than that of the community engagement and workplace engagement projects, there is sufficient evidence that the classroom engagement activities have a measurable effect on the attitudes of participants towards life: The quotations refer to classroom activities as "life-changing" and instilling an attitude of "making every moment count and having fun while doing it".	Quotations are given in Attachment 20.3.7	Effect of classroom engagement on the attitude of participants: Paragraphs 3.3.6.3 and 3.3.7.3

It is clear that, apart from the learning of subject content and of generic skills, the engaged learning strategy has many benefits to the different stakeholders, including attitudinal and personal benefits to participants and improved performance of the organisations where participants were active. This finding could not be verified quantitatively, because the benefits ensuing from the strategy were only measured during the post-test.

7.4.2 Specific themes

Having confirmed from the qualitative data that the engaged learning strategy enables learning, develops generic skills and has various other benefits to participants and other stakeholders, the mechanisms involved were investigated. For the sake of structure, the different constructs contained in the engaged learning strategy were first examined individually, after which the links between the constructs are analysed in detail.

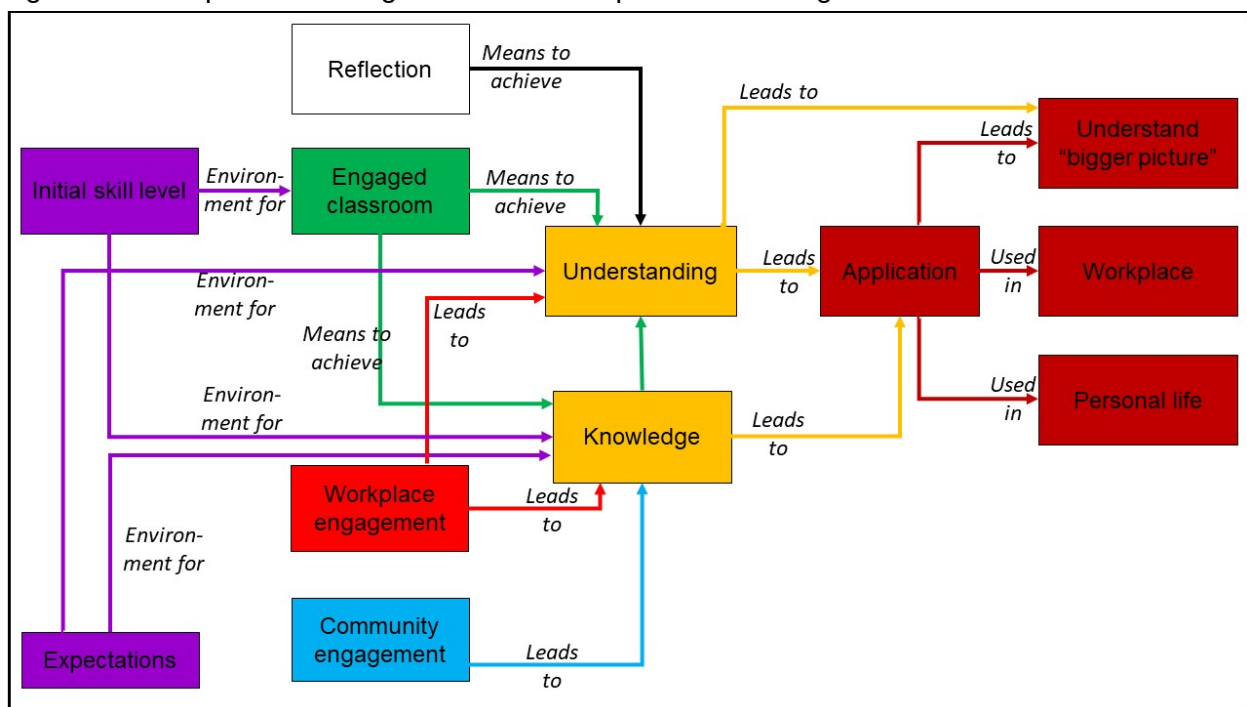
The starting point was to understand the mechanism for the learning of academic content as a result of the engaged learning strategy, which forms the first theme discussed in paragraph 7.4.2.1 below. This was followed by an analysis of each of the generic skills included in the original model of the strategy, with some reference to those skills that were mentioned regularly in respondents' responses, but that do not appear in the original model. The exception is critical thinking skills, appearing so often that it was included in the amended strategy diagram, given in Figure 7-3. These themes are described in paragraphs 7.4.2.7 to 7.4.2.10. Finally, the mechanisms through which the engaged learning strategy would benefit learning and develop these selected generic skills are described in paragraphs 7.4.2.11 to 7.4.2.13 after which these findings are summarised in paragraph 7.4.3.

For the specific themes, quotations were not just taken from the final reflection reports submitted at the end of the intervention, as was the case for the general themes, but also from the specific reflection reports that were submitted during the course of the intervention.

7.4.2.1 Specific theme 1: The strategy for engaged learning enables deep learning

That the engaged learning strategy enables learning, has been established in paragraph 7.4.1.1 above. To investigate the mechanisms of learning that emerged during the study, the possible mechanisms were first combined in a single model, given in Figure 7-4. This model was derived by combining evidence from literature, described in chapters 2 and 3, with codes that were used in the qualitative research (using open coding). The proposed model, given in Figure 7-4, is described in detail with proof from literature, and then the different links in the model are individually discussed as they emerged from the responses to ascertain whether the model holds. Note that this model excludes reference to the development of generic skills and only refers to learning of academic content, or subject-related learning.

Figure 7-4: Proposed learning mechanism for qualitative testing



Source: Compiled from chapter 3 and 4

It must be noted that respondents often refer to academic content in quotations as "operations management" and even to some of the topics covered in the module. This is specific to the environment where the study was carried out, and similar results should be expected if an

engaged learning strategy is employed in any other discipline with a strong practical component, as suggested in paragraph 1.7. All these terms can be regarded as referring to the learning of academic subject content.

The proposed mechanism is organised in a model that has five layers (from left to right). Based on the assumptions of andragogy, as described in paragraph 2.3.2, adults learn when they need to. Since a number of respondents stated that their foremost expectation is to learn (not reported in the study, since participants could be identified from their course expectation forms, which were not anonymous), the model starts with expectations on the left as an input to the learning process.

Also on the left of the model in Figure 7-4, the initial skill level of participants is listed. A proportion of the participants is employed as operations managers (on different levels in the organisations where they work) and therefore have a working knowledge of operations management. Also, a large percentage of respondents had exposure to the theoretical content included in the module during a Post-graduate Diploma in Management, which they have completed the semester before entering for this course, described in quantitative finding 10, given in paragraph 7.3.10. Referring to the assumptions of andragogy, described in paragraph 2.3.2, adult learning builds on the existing knowledge and the wealth of experience of the students, which makes their prior level of knowledge relevant to the learning taking place during this intervention.

The second layer of codes in Figure 7-4 refers to the environments and activities that enable learning. The engaged learning strategy takes place in three environments: the classroom, the workplace and a community organisation. The group community project is the community engagement vehicle for learning, while the workplace-based individual project provides work-integrated learning. Classroom learning is enabled through different methods (all classroom engagement activities) and is also reinforced through reflection. These elements were introduced into the learning model, because the main epistemology underlying engaged learning is constructivism, as explained in paragraph 2.7, and because engaged learning is built on experiential learning methodologies as described in chapter 3.

The evidence provided in paragraph 3.3.3.3 is clear that one of the benefits of service-learning projects is deep learning (Hahn & Hatcher, 2014:66), but there is even more evidence that service-learning projects lead to the practical application of knowledge (Lester *et al.*, 2005:290). Similarly, as described in paragraph 3.3.4.3, the evidence is strong that work-integrated learning enables high-quality learning (Arbaugh & Hwang, 2015:1083). Similar to the above two methods, classroom engagement teaching methods are mostly based on the concept of experiential learning. This includes games and simulations (Eseryel *et al.*, 2014), as described in paragraph

3.3.6, videos, and reflective practice (Harrington & Luo, 2016:7; Richard *et al.*, 2017:73), as described in paragraph 3.3.9.

These methodologies have to lead to not just knowledge, but to understanding too (Fernandes, 2014:225; Jacob & Issac, 2014:553; Lemons, 2017:C?). The third layer in the model, therefore, shows the direct results of the learning activities: knowledge and understanding. There is also a link between knowledge and understanding, with knowledge leading to understanding (Bremme & Beelmann, 2018:356). Evidence for the notion that knowledge must lead to understanding flows from all the epistemic schools, from ancient times to the 21st century, as described in chapter 2 and summarised in Table 3-1. The paradigm shift in learning theories in the 21st century even suggests, as described in the epistemology of connectivism (Siemens, 2014:7), that knowledge is no more the objective of learning, that knowledge also resides in systems such as computer memories, and that learning is ONLY about understanding and application. The fourth layer is about application. As described in the epistemology of connectivism in paragraph 2.8; both knowledge and understanding should lead to application.

This is also the underlying premise of most of the experiential learning methodologies, described in chapter 3. The ultimate aim of acquiring or generating knowledge is to be able to apply it (Savery, 2015:13). The fifth layer shows the real value-adding that results from learning. The application happens not just in the workplace, but also in the personal life of the student, and understanding the bigger picture makes sense of what has been learnt. This is commensurate with the behaviourist theories, described in paragraph 2.5 that a change in behaviour results from learning. The understanding of the bigger picture also corresponds with the andragogic principle, shown in paragraph 2.3.2, that adults learn to make sense of their environment.

That the three significant elements of engaged learning all lead to improved learning, has already been established in paragraph 7.4.1.1. All the individual links in this model are now individually investigated from the qualitative responses.

7.4.2.1.1 Links between expectations and knowledge and between expectations and understanding

For the remainder of this chapter, the document where participants state their expectations of the module is only used in paragraphs 7.4.2.1.1. In any subsequent paragraphs, all analyses are done on reflections that were collected during or after the intervention. Also note that all expectations were collected from participants before unique codes were chosen, hence no reference will be made to the participant's code when expectations are quoted. Where the

participants shared their expectations of the course, there were ample references to learning, application, people management and the application of the learning to enable business benefits.

The first linkage investigated was that between expectations and learning.

Table 7-20: Qualitative finding: Expectation does not lead to learning

Finding	Empirical support	Theoretical support
Although quite a number of participants stated in their expectations that they want to learn subject contents, in the final reflection and in the continuous reflection reports there was scant reference to the expectations in conjunction with knowledge, learning and application, bar mentioning that the experience was more than the general idea of what an MBA degree course entails. It must therefore be concluded from the qualitative evidence that expectations to learn does not improve acquisition of knowledge nor understanding of the subject contents.	Quotations are given in Attachment 20.4.1	Andragogy: Paragraph 2.3 Constructivism Paragraph 2.7

It could, therefore, be inferred that expectations must be excluded from the learning model, based on the responses.

7.4.2.1.2 Link between initial skill level and knowledge

The next link that was investigated was the link between prior knowledge of the subject content and knowledge attained through the engaged learning strategy.

Table 7-21: Qualitative finding: Prior knowledge improves understanding

Finding	Empirical support	Theoretical support
It is noticeable that most respondents referring to knowledge also goes beyond mere knowledge and addresses understanding and application too. There is sufficient evidence that students with a prior knowledge of the subject matter find learning easier and possibly benefit on another level as people with no prior knowledge. In most cases students who completed a course in operations management before, found this to be the practical leg of the learning and could relate to it more rapidly than those without prior experience or knowledge. It is also clear that the level of learning of people who have work experience in the subject differs from those who don't. From the responses there is also evidence that a lack of prior knowledge does hamper the students' initial progress, and that students with no previous experience do struggle more than those with prior experience. It can be concluded that there is sufficient evidence of a link between the prior level of exposure to the subject content and the level of learning, in terms of both accumulation of knowledge and understanding of such knowledge, taking place.	Quantitative analysis: Paragraph 7.3.10 Quotations on the link between prior academic knowledge of the subject and work experience and learning are given in Attachment 20.4.2	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7

This finding seems to contradict quantitative finding 10, where it was shown that participants without prior experience learned more. However, the mechanism described in Table 7-21 refers to the mechanism, where people with prior knowledge might not have acquired the knowledge during the intervention, but that prior knowledge of the subject enable better understanding and application of the knowledge. These two findings do not contradict each other. Initial skill level must therefore be retained in the learning model, based on the responses.

7.4.2.1.3 Links between the individual workplace engagement project and both knowledge and understanding

Similar to the community engagement project, the link between the workplace engagement (work-integrated learning) project and learning has already been established, and the next link to investigate was therefore whether there is empirical evidence that the workplace engagement project is responsible for acquiring knowledge and understanding.

Table 7-22: Qualitative finding: Effect on workplace engagement project on learning

Finding	Empirical support	Theoretical support
The most productive learning ground for knowledge by far is the work- integrated learning project. Many participants allude to the learning that took place during the "individual project" or "individual assignment" (the WIL project). It is also clear from all the responses that this goes way beyond knowledge, but understanding, application and a sense of where it fits into the bigger picture are major deliverables of the WIL project. There is also evidence of a realisation that the knowledge actually resides on shop-floor level at the workplace, and that the workplace engagement project encouraged participants to go to shop-floor level to acquire the knowledge. The learning is especially pronounced for those students that work in the public sector. It can therefore be construed that the work engagement project does lead to both knowledge and understanding.	Quotations are given in Attachment 20.4.6	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Work-integrated learning: Paragraph 3.3.4

The links between the workplace engagement project and both learning and understanding are therefore retained in the proposed model.

7.4.2.1.4 Links between community engagement project and both knowledge and understanding

Although the link between the group community project and learning has already been established, the next link to investigate was whether there is empirical evidence that the group community engagement project is responsible for acquiring knowledge and develops understanding.

Table 7-23: Qualitative finding: Effect of community engagement project on learning

Finding	Empirical support	Theoretical support
There is limited evidence that the community project enables subject- related learning. In the few cases where learning from the community project is mentioned, the description of learning from the community project refers to understanding and application of the knowledge rather than the accumulation of knowledge, and in most cases to the acquisition of generic skills. The few respondents that did report learning, mentioned learning in general, rather than knowledge acquisition. Although the lack of evidence does not refute the knowledge gained through the community engagement (service-learning) project, the evidence is not strong enough to warrant the inclusion of the community engagement project as an antecedent of subject-related knowledge acquisition. This specifically refers to knowledge acquisition, and it should not be inferred that the community project does not lead to learning in general as already established in paragraph 7.4.1.1. The evidence is stronger that the community project is where other skills are honed.	Quotations on the link between the community project and knowledge is given in Attachment 20.4.3	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Service learning: Paragraph 3.3.3

The community engagement project is therefore moved from the proposed learning model to link with application, rather than with knowledge.

7.4.2.1.5 Links between classroom engagement and knowledge and between classroom engagement and understanding

Table 7-24: Qualitative finding: Effect of classroom engagement on learning

Finding	Empirical support	Theoretical support
This link specifically joins classroom activities to knowledge. There is ample evidence that classroom engagement activities indeed facilitate the accumulation of knowledge. Most of the references go beyond mere knowledge to understanding and application of the knowledge, mostly in the work environment, but in many cases also in the participants' private lives. Many of the quotations refer to specific activities that form part of classroom engagement and what they have learnt from them.	Quotations are given in Attachment 20.4.7	Andragogy: Paragraph 2.3 Constructivism: Paragraph 2.7 Experiential learning: Paragraph 3.3.1 Games and simulations: Paragraph 3.3.6 Student classroom engagement: Paragraph 3.3.7

There is therefore sufficient evidence from the research that the way classroom engagement activities were structured does lead to both learning and understanding and that both these links should be retained in the proposed strategy.

7.4.2.1.6 Link between knowledge and understanding

Although the literature is clear that knowledge without understanding is meaningless, especially concerning adult learning, it was necessary to investigate the responses of participants whether it could be construed from the research.

Table 7-25: Qualitative finding: Deep learning

Finding	Empirical support	Theoretical support
There is strong evidence that acquisition of knowledge and understanding, also referred to as "deep learning" go hand in hand. Many participants, when referring to knowledge gained, also mention that it is accompanied by understanding of the knowledge.	Quotations are given in Attachment 20.4.8	Andragogy: Paragraph 2.3 Cognitivism Paragraph 2.6 Constructivism: Paragraph 2.7

The link between knowledge and understanding is therefore proven through the research and is retained in the proposed model.

7.4.2.1.7 Links between knowledge and application and between understanding and application

Table 7-26: Qualitative finding: Application of knowledge

Finding	Empirical support	Theoretical support
Proof that the learning results in application abounds in the responses by many participants. In some cases, the responses clearly show that the respondent sees the (lack of) application in their workplace after acquiring the knowledge, especially in the public service. Most quotations linking knowledge and understanding with application show that knowledge and understanding are necessary for application-	Quotations are given in Attachment 20.4.9	Andragogy: Paragraph 2.3 Behaviourism Paragraph 2.5 Cognitivism Paragraph 2.6 Constructivism: Paragraph 2.7

The link of both knowledge and understanding with the application is therefore supported and should be retained in the proposed model.

7.4.2.1.8 Link between understanding and the broader context ("bigger picture")

Especially amongst MBA students, there is often criticism that students learn in silos and that the learning does not provide them with a broader view of the environment where the knowledge should be applied. Participants often refer to the environment as "the bigger picture". The next step was, therefore, to look for linkages between understanding and the bigger picture, and between application and the bigger picture.

Table 7-27: Qualitative finding: Learning and the bigger picture

Finding	Empirical support	Theoretical support
There is sufficient evidence that participants look beyond their immediate environment and understand the application of the subject contents within the broader environment (the "bigger picture").	Quotations are given in Attachment 20.4.10	Andragogy: Paragraph 2.3 Cognitivism Paragraph 2.6 Connectivism Paragraph 2.8

The links of understanding and application with the bigger picture should, therefore, be retained in the proposed model.

7.4.2.1.9 Link between application and using the knowledge in the workplace

Table 7-28: Qualitative finding: Workplace application of knowledge

Finding	Empirical support	Theoretical support
According to behaviourist epistemology, real learning can be seen in behaviour. To prove whether learning has really taken place, the real question to be answered is therefore not whether the respondent understand the application in the workplace, but whether the learning is already being applied by him/her in the workplace. (The same would apply to the application in his or her private life, as discussed in paragraph 7.4.2.1.10 below). Quotations on application of both the total subject's contents and specific topics covered at the workplace of participants are common. It is clear that the application of the knowledge does find its way into the behaviour of participants in the workplace.	Quotations are given in Attachment 20.4.11	Andragogy: Paragraph 2.3 Behaviourism Paragraph 2.5 Cognitivism Paragraph 2.6 Constructivism: Paragraph 2.7

The link between application and workplace application is therefore included in the proposed model.

7.4.2.1.10 Link between application and application in personal life

The last link in the model is to see whether the data supports the notion that participants actually apply the theory in their personal lives.

Table 7-29: Qualitative finding: Workplace application of knowledge

Finding	Empirical support	Theoretical support
There is sufficient evidence that what the participants have learnt, is being applied in their personal lives, in addition to their workplaces.	Quotations are given in Attachment 20.4.12	Andragogy: Paragraph 2.3 Behaviourism Paragraph 2.5 Cognitivism Paragraph 2.6 Constructivism: Paragraph 2.7

This link is indeed well-proven from the responses and is retained in the model.

7.4.2.1.11 Learning model supported by this research

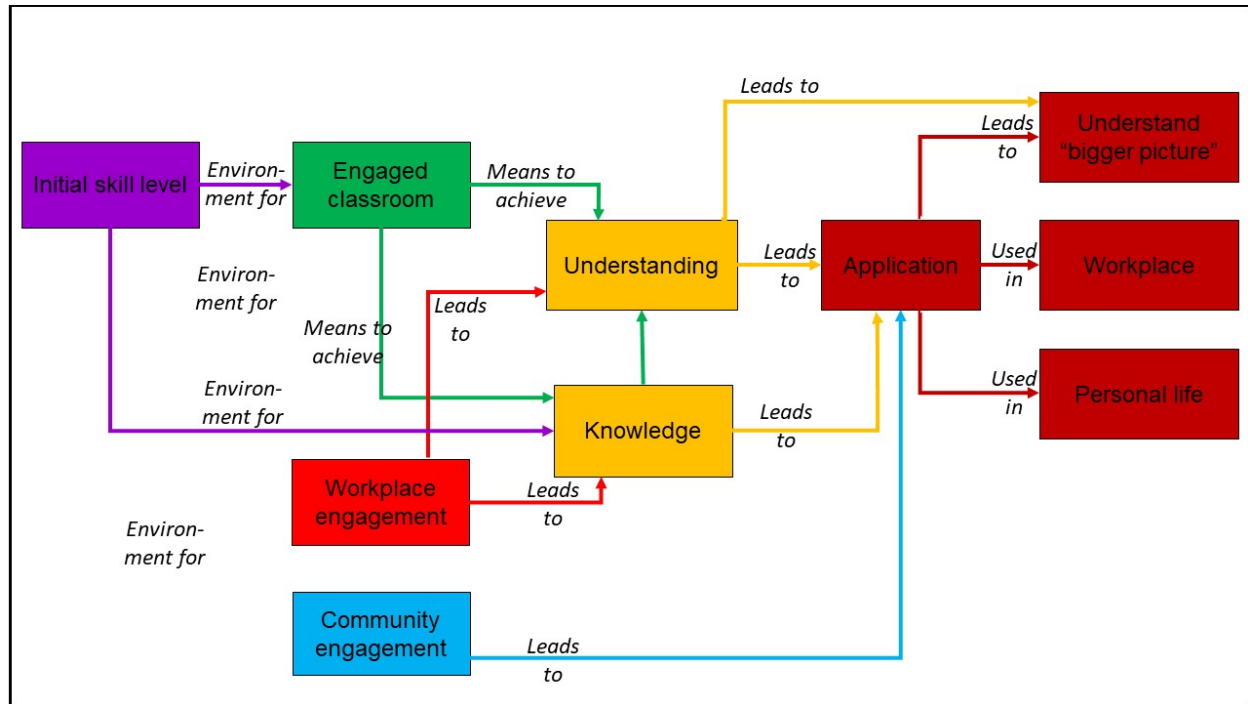
From the responses, there is no indication that reflection contributed towards learning as part of the engaged learning strategy, and reflection is therefore removed from the proposed model.

A validated model for the learning mechanism through the engaged learning strategy is therefore proposed, with only those links that are substantiated by participants included.

From the research, it has been found that the initial skill level creates the environment for knowledge acquisition and better learning in the classroom engagement. The involvement in classroom engagement activities is the one value-adding element that leads to the attainment of knowledge and improved understanding, the latter also resulting from the knowledge gained. The work integrated learning project is the other significant value-adding element, responsible for knowledge and understanding. Understanding the academic content also assists in understanding the bigger business context. Both knowledge and understanding are necessary for application, and the research shows that this application leads to changed behaviour in the workplace and in the personal lives of participants. These relationships are summarised in

Figure 7-5.

Figure 7-5: Learning mechanism supported by the study



Source: Compiled from the qualitative study

7.4.2.2 Specific theme 2: Asking questions is a core communication skill

One of the most prominent themes that emerged from the research is the mechanism of communication skills developing through the engaged learning strategy. As evident in paragraph 4.3.1, communication skills can be subdivided into oral and written communication, while oral communication can again be subdivided into transmitting information and receiving information, with non-verbal communication being part of both the latter groups. These were included in the codes, and possible links between these codes were explored.

Written communication skills, the skill to share information, and listening skills all appeared in the responses of participants. There is sufficient proof that all three of these are developed through engaged learning. However, the one that stands out is the improvement in listening skills.

The first communication issue that was investigated was whether engaged learning develops the skill to share information.

7.4.2.2.1 Development of information sharing skills

A number of respondents referred to the skills to express themselves, and the first investigation was to see whether this skill is key to the skill of sharing information. The data does not support this link since no visible link could be established between the skill to express yourself and the skill to share information. Neither could links be found between the skill to express yourself and conflict management, written communication, preparation or criticism skills, nor links between any of these codes. All further analysis, therefore, focused on the relationships between sharing of information, asking questions, listening, understanding, feedback and non-verbal communication.

Table 7-30: Qualitative finding: Information sharing skills

Finding	Empirical support	Theoretical support
After understanding as a communication issue (being mentioned 228 times in the responses of participants), the communication skill that were most often mentioned by respondents, is the skill to share information (124 times). This includes talking and presentation skills, and there is strong evidence that this skill has developed during the intervention. Quite often the skill to share information is mentioned in conjunction with the skills to listen and to ask questions. The evidence indicates that the skill to ask questions is also key to sharing information.	Quantitative analysis: Paragraph 7.3.2 Quotations are given in Attachment 20.5.1	Communication skills: Paragraph 4.3.1

Table 7-31: Classroom engagement leads to sharing information

Finding	Empirical support	Theoretical support
The mechanisms to improve the skill of sharing information are also mentioned by respondents: Group discussions and class activities, as well as participation in group work (both in the class and in general) all seem to have played a part in developing the skill to share information. Some coaching on generic skills was done as part of the voice feedback on assignments. This appears to have had a beneficial effect on the development of information sharing skills. The development of the skill to share information, especially through classroom engagement, has therefore been proven to be a result of the engaged learning strategy.	Quotations are given in Attachment 20.5.2	Communication skills: Paragraph 4.3.1 Experiential learning: Paragraph 3.3.1 Games and simulations: Paragraph 3.3.6 Student classroom engagement: Paragraph 3.3.7

7.4.2.2.2 Development of listening skills

Participants often linked understanding to either listening skill or to the skill to ask questions. These two skills stood out from responses.

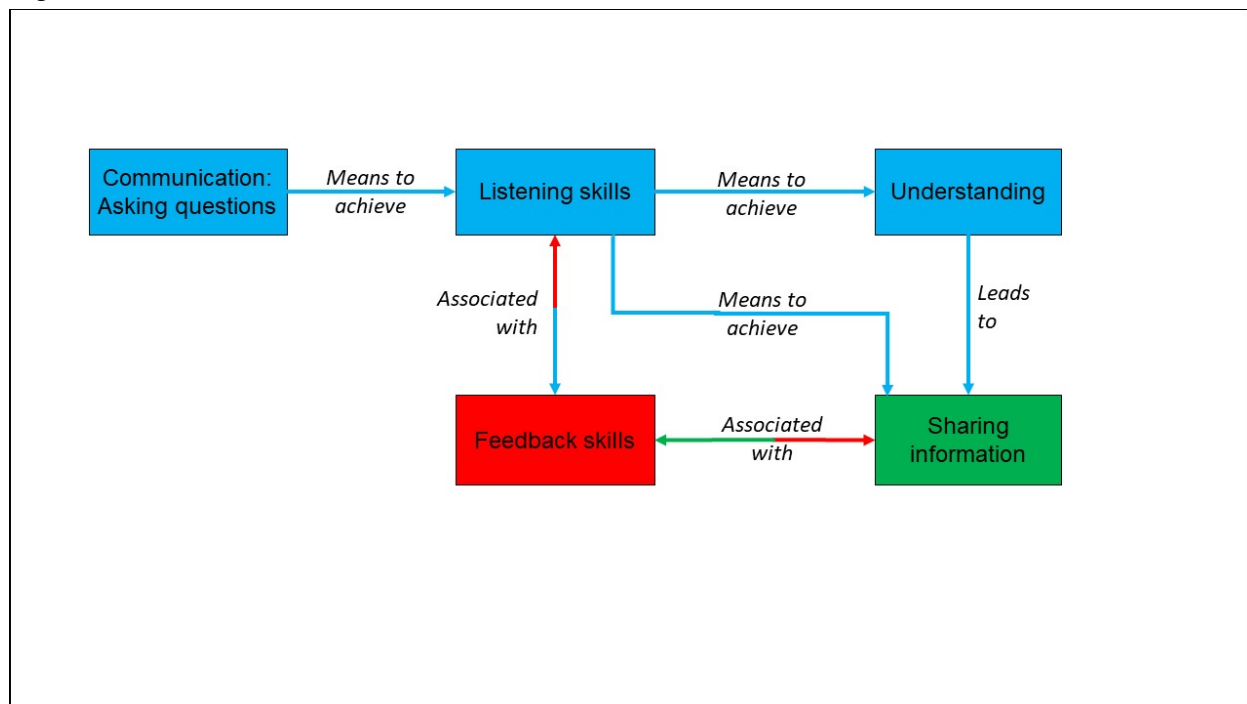
Table 7-32: Qualitative finding: Asking questions

Finding	Empirical support	Theoretical support
The skills to ask questions was mentioned 74 times in responses and the skill to listen 118 times. Many participants not only alluded to the fact that they have the skill, but that the skill was developed during the intervention.	Quotations are given in Attachment 20.5.3	Communication skills: Paragraph 4.3.1
There is a very strong link between asking questions and the skill to listen.	Quotations are given in Attachment 20.5.4	
The link between listening and understanding, as part of communication skills, is pertinent. A number of the quotations specifically refer to the combination of these skills and the causal nature of the link between them. In some cases respondents draw the link directly from asking questions to understanding.	Quotations are given in Attachments 20.5.5 and 20.5.6	
The unexpected link was between the ability to listen and to share information. The following quotations do however show that the ability to listen is also key to sharing information.	Quotations are given in Attachment 20.5.7	
Some participants mentioned the link between empathy and listening skill, where the community engagement project plays a major role in the development of empathy. Other respondents also referred to the development of empathy, specifically in relation to listening.	Quotations are given in Attachment 20.5.8	

A very clear pattern has emerged from the responses: The skill to ask questions leads to the skill to listen, which in turn leads to understanding, which aids most other skills associated with communication. This relationship is shown in

Figure 7-6.

Figure 7-6 Communication skills mechanism



Source: Redrawn from Atlas.TI

Figure 7-6 summarises the findings in Table 7-32. The key skill is to learn to ask questions. Being able to ask questions enables listening skills, which in turn enables understanding. Listening skills also leads to the skill to share information, the latter also depends on understanding the issue. Finally, feedback skill has two components: it is associated with the sharing of information and with listening. It is clear: The essential skill is to ask questions, which is a teachable skill. This issue will be further elaborated on in paragraph 7.4.2.2. How the engaged learning strategy contributes to the development of communications skills is described in detail in paragraph 7.4.2.2.3.

7.4.2.2.3 Mechanisms for developing communication skills

The engaged learning strategy consists of three main elements: workplace engagement, community engagement and classroom engagement. Since asking questions has been established above to be the core communication skill, the question is to what extent each of these three contributes to the ability to ask questions. The evidence is strong that communication skills in general and the skill to ask questions specifically are developed through all three main elements of the engaged learning strategy.

Table 7-33: Qualitative finding: Mechanism for developing communication skill

Finding	Empirical support	Theoretical support
There is strong evidence from the responses that communication skills in general and specific communication skills, such as empathy, listening, asking questions and sharing information develop from involvement in community engagement projects. Since the community engagement project was carried out in study groups, there is also a strong link between group work and communication skills, specific the skill to ask questions. Group work develops communication skills.	Quantitative analysis: Paragraph 7.3.2 Quotations are given in Attachment 20.5.9	Service learning: Paragraph 3.3.3 Communication skills: Paragraph 4.3.1
There is overwhelming evidence that the largest contributor to communication skills, and especially the skill to ask questions, is the workplace engagement project.	Quotations are given in Attachment 20.5.10	Work-integrated learning: Paragraph 3.3.4 Communication skills: Paragraph 4.3.1
Not all classroom engagement activities had the same effect on communication skills. The ones that are mentioned most often, are group discussions and simulation exercises. However, there is sufficient evidence that classroom engagement activities do lead to the development of communication skills.	Quotations are given in Attachment 20.5.11	Communication skills: Paragraph 4.3.1 Experiential learning: Paragraph 3.3.1 Games and simulations: Paragraph 3.3.6 Student classroom engagement: Paragraph 3.3.7

In summary, the one communication skill that can be taught and developed is the skill to ask questions, and it is evident that this happens through the engaged learning strategy.

7.4.2.3 Specific theme 3: Group community work is the most important enabler of teamwork skills

The context at the business school where this research has been carried out is relevant to this discussion. At the beginning of the MBA programme, participants are divided into syndicate groups of between five and eight members and these groups work together in group assignments for the duration of their MBA study. These groups are the vehicles for the community engagement service-learning project. Teamwork played an essential part during the intervention, since the community engagement project is a group project. It is therefore not surprising that teamwork, group work and various teamwork skills are mentioned quite often in the reflection reports of respondents.

7.4.2.3.1 Causal links between the different teamwork skills

The skill set required to become a good team player is extensive and diverse. Unlike some of the other generic skills, such as problem-solving and communication, teamwork is a broad collection of attributes and skills, as already described in detail in paragraph 4.3.2. To determine the mechanism through which the engaged learning strategy contributed to the development of teamwork skills, the different codes had to be arranged in some logical order to enable analysis of the relationships between them. Using open coding a reasonably large number of codes (18) was therefore assigned to the construct "teamwork". Not all of these refer to teamwork skills, and to establish the mechanism of acquiring teamwork skills, the codes were arranged under the sub-headings "inputs", "enablers", direct results, application (indirect results) and internalising (proof that these skills really become part of the make-up of students during the semester. (This grouping is similar to that used when establishing the mechanism for learning in paragraph 7.4.2.1).

Environmental factors ("Inputs") that were identified were awareness of the group's strengths and weaknesses, shared values in the group, and diversity in the group. (Note that these are not strictly teachable skills, but rather attributes that create the environment for productive teamwork, when used well. "Enablers" (skills that enable the group to work together) were communication, sharing responsibility, team governance, team development skills and group discussions. Direct results (skills that are developed during team projects) are managing group dynamics, collaboration, participation and the ability to trust. Application skills (skills that develop indirectly in a team that could translate into results of a successful team) are interdependence & synergy and the performance of the team. Internalising issues mentioned included improved networking, business results as a result of the team's performance and other benefits derived from the group

project. Note that these are the codes that the participants mentioned referring to teamwork, but that not all of them are necessarily teachable skills.

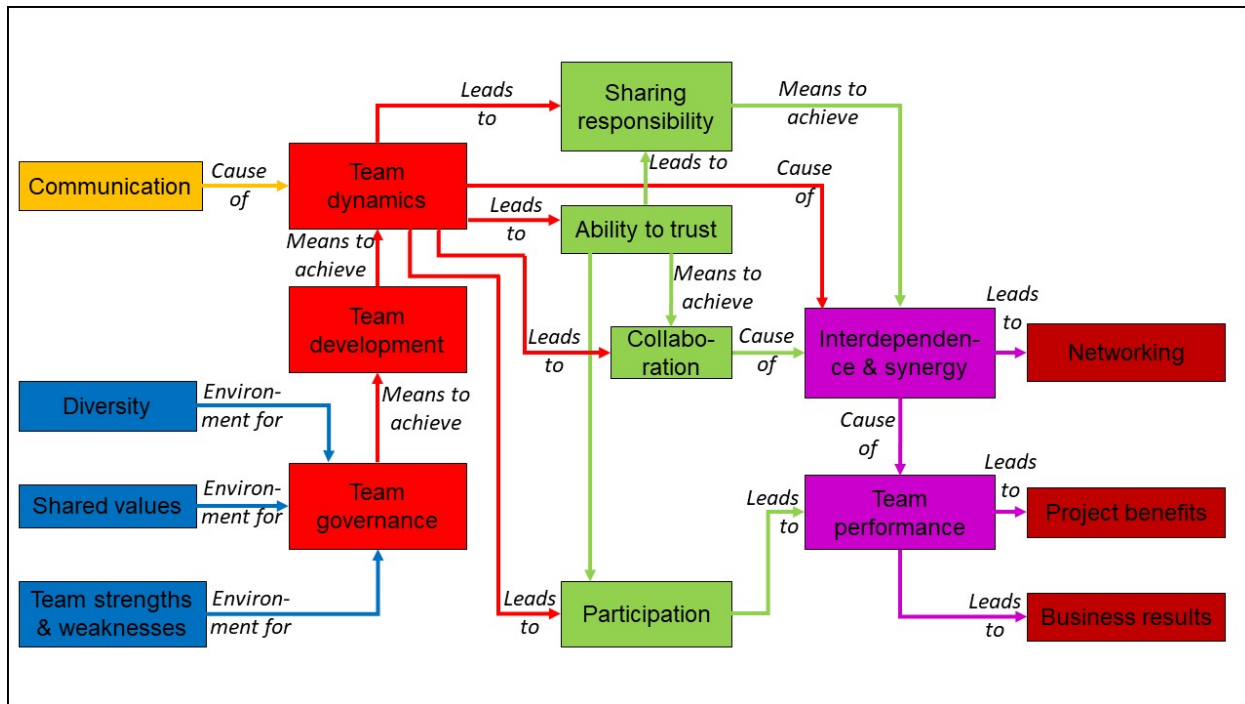
The definition of teamwork skills has been discussed in detail in paragraph 4.3.2, but at this point it suffices to distinguish between teamwork characteristics and skills (teamwork skills are those skills that allow participants to contribute to the success of the team, and in the above categorisation the real teamwork skills are listed in the second and third columns (i.e. those skills that are enablers of better teamwork and/or could be enhanced in the team, and those skills that are developed through teamwork).

Table 7-34: Qualitative finding: Development of teamwork skills

Finding	Empirical support	Theoretical support
Most respondents alluded to shared values, an awareness of strengths and weaknesses of team members and the diversity in the groups as aspects that need to be considered in the governance of the group. Environmental factors are best addressed through good team governance.	Quantitative analysis: Paragraph 7.3 Quotations are given in Attachment 20.6.1	Teamwork skills: Paragraph 4.3.2
Literature is clear that any team goes through various stages of development and that, if this process is managed well, team dynamics are not only more conducive to better team performance, but that this enables better development of various teamwork skills. Participants that reported good team governance, also experienced rapid team development, as can be seen from the following quotations. On the other hand, teams without proper governance reported frustrations and that proper team development did not happen. It became clear that good team governance went hand in hand with good leadership, and that these two combined to enable team development.	Quotations are given in Attachment 20.6.2	
That team development resulted in productive group dynamics was clear from the research	Quotations are given in Attachment 20.6.3	
A group with productive group dynamics, develops various other teamwork skills. The development of the following skills are evident from the quotations: The ability to trust, cohesion, collaboration, participation and sharing the responsibility	Quotations are given in Attachment 20.6.4	
In terms of teamwork skills, it is clear that the following teamwork skills have developed through exposure to engaged learning: Communication (as already discussed in paragraph 7.3.3), team governance, leadership, the ability to manage group dynamics, the skills to participate, collaborate and share responsibility and to trust teammates.		

The linkage between the different teamwork skills can then be depicted in Figure 7-3

Figure 7-7 Mechanism for developing teamwork skills



The five layers of the mechanism for developing teamwork skills are from left to right in the diagram. The enablers of teamwork skills are if the team members have shared values, communicate well, know the strengths and weaknesses of each other and is comfortable with diversity. The enablers are if the team is governed well, if they work at team development, and if team dynamics are managed. The enablers can be managed by good team governance, which spills over into proper team development, which in turn enables management of team dynamics. From the responses, it seems as if the management of team dynamics becomes a pivotal point, and the diagram shows it too: management of team dynamics has a direct or indirect effect on a number of the other team issues in the diagram. These enablers are learnable skills. The direct results of the application of these skills are the sharing of responsibility and the ability to trust, collaborate and participate, all skills that are developed while the team is operating well. The indirect results of the application of these teamwork skills are interdependence (which includes synergy) and a well-performing team, which enables results: Opportunity for better networking, as well as direct benefits in terms of the goal of the team, which should yield business results.

7.4.2.3.2 The mechanism for developing teamwork skills

Table 7-35 Qualitative finding: Mechanism for developing teamwork skills

Finding	Empirical support	Theoretical support
The strongest causal factor towards teamwork skills that were mentioned by participants is the community engagement project: Many references were made to the notion that the community project improved teamwork skills by affecting group dynamics. This could be embedded in the design, as the community engagement project is done in teams, whereas the workplace engagement project is done individually. This is also in line with what has been described in the literature on service- learning (Barth et al., 2014:80; Hebert & Hauf, 2015:48; Jensen et al., 2014:328), as described in paragraph 3.3.3. There is ample evidence that robust communication between group members had a strong effect on the group dynamics in the team, which again was responsible for development of most teamwork skills.	Quotations are given in Attachment 20.6.5	Service learning: Paragraph 3.3.3 Teamwork skills: Paragraph 4.3.2
Group activity in classroom situations had a smaller effect on teamwork skills, mainly because not all classroom activities are carried out in the teams that participants are members of. Where teamwork behaviour and skills are mention in conjunction with classroom engagement activities, most of the activities mentioned involve some group discussions, whether in their own study groups or in other groups, such as industries grouped together to discuss specific topics. Videos where teams work together are also mentioned as showing the benefit of teamwork skills. Some refer to working together on assignments in their study groups.	Quotations are given in Attachment 20.6.5	Teamwork skills: Paragraph 4.3.2 Student classroom engagement: Paragraph 3.3.7
Since the workplace engagement project was an individual project, all references to teamwork in relation to WIL refer to the notion that the skills of the group community projects spill over to the workplace. There is no direct evidence that the WIL project develop teamwork skills.	Quotations are given in Attachment 20.6.6	Work- integrated learning: Paragraph 3.3.4 Teamwork skills: Paragraph 4.3.2

In summary, the skills to be a good team player that are most developed through the engaged learning strategy are team development skills, from which flows the ability to trust, collaborate, participate and share responsibility, and these develop mainly through the community engagement service-learning project.

7.4.2.4 Specific theme 4: Time management is the self-management skill that develops most through the engaged learning strategy

7.4.2.4.1 Causal links between different self-management skills

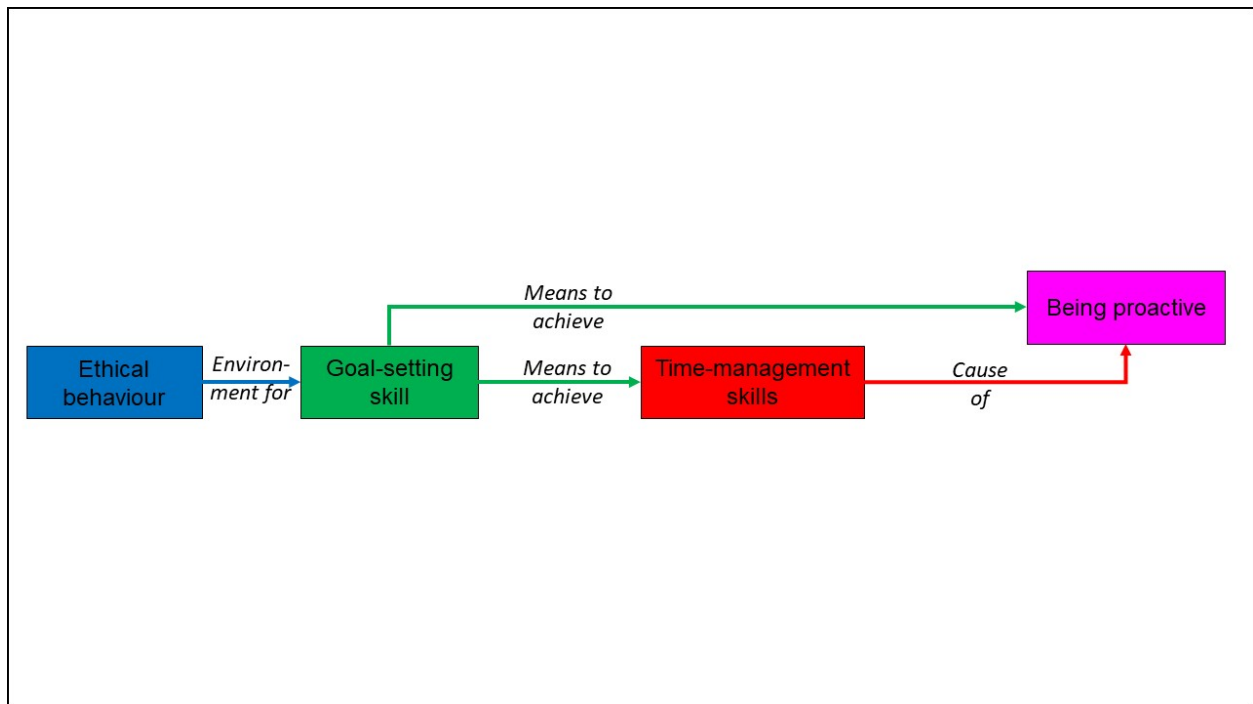
From the literature, a number of self-management skills have emerged. Many of them are not related to each other, and the linkages between some of the others are also not clear. Only a few of these codes were mentioned very often by participants. These were analysed to look for quotations where they would co-exist, and only four remained, with the linkages between these not very strong. The relationships between the four are given in figure 7-7.

Table 7-36: Qualitative findings: Self-management skills

Finding	Empirical support	Theoretical support
During the research the different self- management skills that were mentioned by participants include, in descending frequency order, time- management, goal-setting, the ability to handle risk, being pro-active, ethical behaviour, assertiveness, self- confidence, patience, the ability to focus, conscientiousness and willingness to move out of your comfort zone. An interesting observation was that few participants referred to self- management skills in their final summative reflection. The reason for this void could not be established from the data, but an analysis of the specific comments made about self- management skills showed a number of interesting causal links. The first link is between ethical behaviour and goal-setting. Surprisingly the workplace engagement project seemed to be the strongest driver of ethical behaviour. It is clear that self-management skills, especially time management skills, are developed.	Quantitative analysis: Paragraph 7.3.4 Quotations are given in Attachment 4.3.6	Self- management paragraph 4.3.6

There is a strong causal link between goal-setting and time-management skills. The self-management skill that is mentioned the most often by far, is time-management. The evidence is clear from the research that participants who have learning to set goals, have also acquired time- management skills.	Quotations are given in Attachment 20.9.2	
The data strongly suggests that the ability to manage time is positively related with being proactive. In establishing this linkage, interesting links with other moderating variables have also emerged. The link between the study schedule (both individual and group projects) and being proactive with time management is also evident, and gives an indication as to how the strategy for engaged learning develops pro-activeness through time-management skills.	Quotations are given in Attachment 20.9.3	
There is a very strong link between the group community project and self-management skills, especially time-management. Some participants referred to the tight schedule being responsible for this link.	Quotations are given in Attachment 20.9.4	Service learning: Paragraph 3.3.3 Self- management paragraph 4.3.6
The engaged learning element that has the biggest contribution towards the development of self-management skills, is the workplace-engagement project. The most important self-management skill developing through this project is time management.	Quotations are given in Attachment 20.9.5	Work- integrated learning: Paragraph 3.3.4 Self- management paragraph 4.3.6
The link between classroom activities and self-management skills is not very strong. There is some reference to it. However, this link is not strong enough to infer that classroom engagement activities make a difference to self-management skills.	Quotations are given in Attachment 20.9.6	Student classroom engagement: Paragraph 3.3.7 Self- management paragraph 4.3.6

Figure 7-8 Mechanism of self-management



7.4.2.5 Specific theme 5: The engaged learning strategy causes some measurable difference in the development of cultural awareness skills

Cultural awareness is the one generic skill that is gaining massive importance in the science of generic skills worldwide. Although a reasonable effort was made to encourage interaction between different cultures, and although some coaching on cultural awareness was done during the intervention, no measurable difference in the level of cultural awareness could be inferred from the responses of participants. There is no indication from the responses of the mechanism through which cultural awareness is developed.

7.4.2.5.1 Evidence of development of cultural awareness

Table 7-37: Qualitative finding: Cultural awareness

Finding	Empirical support	Theoretical support
There is an Initial level of cultural awareness amongst the participants. Those participants that are used to working in multicultural teams, seem to experience less development of cultural awareness skills than those who do not. Many participants are working in multi-cultural teams in their workplace, and few of the MBA study groups were really multi-cultural.	Quantitative analysis: Paragraph 7.3.4 Quotations are given in Attachment 20.7.1	Cultural awareness: paragraph 4.3.8
Interestingly, very little mention has been made of cultural awareness in the final summative reflection report, although there was some focused discussions on cultural intelligence or cultural diversity developing in the responses collected during the intervention. As such it is explicable that, although some coaching on cultural awareness formed part of the classroom engagement activities, development of cultural awareness as a result of the engaged learning strategy is low, relative to other generic skills.	Quotations are given in Attachment 20.7.2	

7.4.2.5.2 The mechanism for developing cultural awareness skills

Table 7-38: Qualitative finding: Development of cultural awareness skills

Finding	Empirical support	Theoretical support
The cultural awareness development that did take place, happens mainly in the group community engagement project. This is due to two elements: the interaction with the community organisation, and the interaction within a diverse study group	Quotations are given in Attachment 20.7.3	Cultural awareness: paragraph 4.3.8

The inclusion of cultural awareness as one of the generic skills developing from the engaged learning strategy is warranted, although there is insufficient data to suggest a specific mechanism for developing cultural awareness. This could be due to the notion that a reasonably high level of cultural awareness was already present at the beginning of the intervention.

7.4.2.6 Specific theme 6: Engaged learning develops problem-solving skills

7.4.2.6.1 Evidence of development of problem-solving skills

Table 7-39: Qualitative finding: Development of problem-solving skills

Finding	Empirical support	Theoretical support
The problem-solving process is a process that is well-described in literature and that is intuitively understood and practices by many (source). However, although the codebook (of which the structure is given in Attachment 21) made provision for the different steps of the problem-solving process, no causal linkage could be established from the data that these steps are followed. Hence it is accepted that most of the participants use a logical process for solving problems, but they did not deem it necessary to mention the process in their reflection reports. However, many did refer to the fact that they had to collect data and that they have learnt to solve problems. There is ample evidence that engaged learning develops problem-solving skills. This is in line with research on service-learning, classroom engagement and work-integrated learning discussed in chapter 3. One aspect of problem-solving that stands out from the responses, is that successful problem-solving requires a solution orientation.	Quantitative analysis: Paragraph 7.3 Quotations are given in Attachment 20.8.1	Problem-solving: paragraph 4.3.4 Problem- based learning: paragraph 3.3.5

7.4.2.6.2 The mechanism for developing problem-solving skills

Table 7-40: Qualitative finding: Mechanism for development of problem-solving skills

Finding	Empirical support	Theoretical support
There is strong evidence that the problems solved for the community organisation lead to the development of problem-solving skills. It can be deduced that the service learning project develops problem-solving skills	Quotations are given in Attachment 20.8.2	Service learning: Paragraph 3.3.3 Problem- solving: paragraph 4.3.4
The strongest relationship with problem-solving was the WIL-project, where there is overwhelming evidence that problem-solving skills are developed by the workplace engagement project as defined under the engaged learning strategy.	Quotations are given in Attachment 20.8.3	Work- integrated learning: Paragraph 3.3.4 Problem- solving: paragraph 4.3.4
The link between classroom engagement and problem-solving skills is much weaker than for service-learning and WIL, but there is evidence that some of the classroom engagement exercises do have a positive influence on problem-solving skills. The strongest evidence is that students learn from each other's experience. However, the evidence is not strong enough to suggest that classroom engagement develops problem-solving ability.	Quotations are given in Attachment 20.8.4	Games and simulations: Paragraph 3.3.6 Student classroom engagement: Paragraph 3.3.7 Problem- solving: paragraph 4.3.4

It could be summarised that engaged learning does lead to the development of problem- solving skills, although the mechanism through which it happens is not clear from the data.

7.4.2.7 Specific theme 7: The key critical thinking skill is analytical thinking

One generic skill that was not intended to be part of the original design of engaged learning is critical thinking. During the course of the intervention, it soon became clear that these critical thinking skills are essential to both MBA students and to the industries where they work. An analysis of critical thinking skills was therefore included in the study.

Related to the notion that questioning is the key communication skill is the main point that emerged from the research about critical thinking. Critical thinking is a generic skill with a number of related skills, described in paragraph 4.3.7. Some critical thinking skills emerged and were

captured through open coding. From these skills, some significant relationships between these skills emerged.

The focus in the research was on two things: first to find out which critical thinking skills have developed through the engaged learning strategy, and then to find out which elements of the engaged learning strategy lead to developing critical thinking skills.

7.4.2.7.1 Causal links between different critical thinking skills

The process again was to look at possible causal relationships between the different critical thinking skills from the literature and then investigating them from the responses of participants. The most commonly mentioned critical thinking skill is the skill to challenge the status quo (128 times), followed by analytical skills (97 times), creative thinking (87 times) and open-mindedness (21 times}. Although the literature is not clear on any causal links between these skills, responses have shown a reasonable link between some of them.

Table 7-41: Qualitative finding: Development of critical thinking skills

Finding	Empirical support	Theoretical support
The most commonly mentioned critical thinking skill is the skill to challenge the status quo (128 times), followed by analytical skills (97 times), creative thinking (87 times) and open-mindedness (21 times). Although the literature is not clear on any causal links between these skills, responses have shown a reasonable link between some of them. An interesting link is between the ability to ask questions, as discussed in paragraph 7.4.2.2, and challenging the status quo, as a critical thinking skill. From the responses it is clear that asking questions lead to analytical thinking.	Quotations are given in Attachment 20.10.1	Critical thinking skills paragraph 4.3.7
There is a clear evidence that analytical thinking is responsible for challenging the status quo	Quotations are given in Attachment 20.10.2	
The key to challenge the status quo is a key critical thinking skill, and it was the critical thinking skill most often referred to by participants. It is clear that challenging the status quo has a direct influence on open- mindedness, creative thinking, solution orientation and on focusing on the important issues. Solution orientation also links up with problem-solving.	Quotations are given in Attachment 20.10.3, 20.10.4, and 20.10.5	

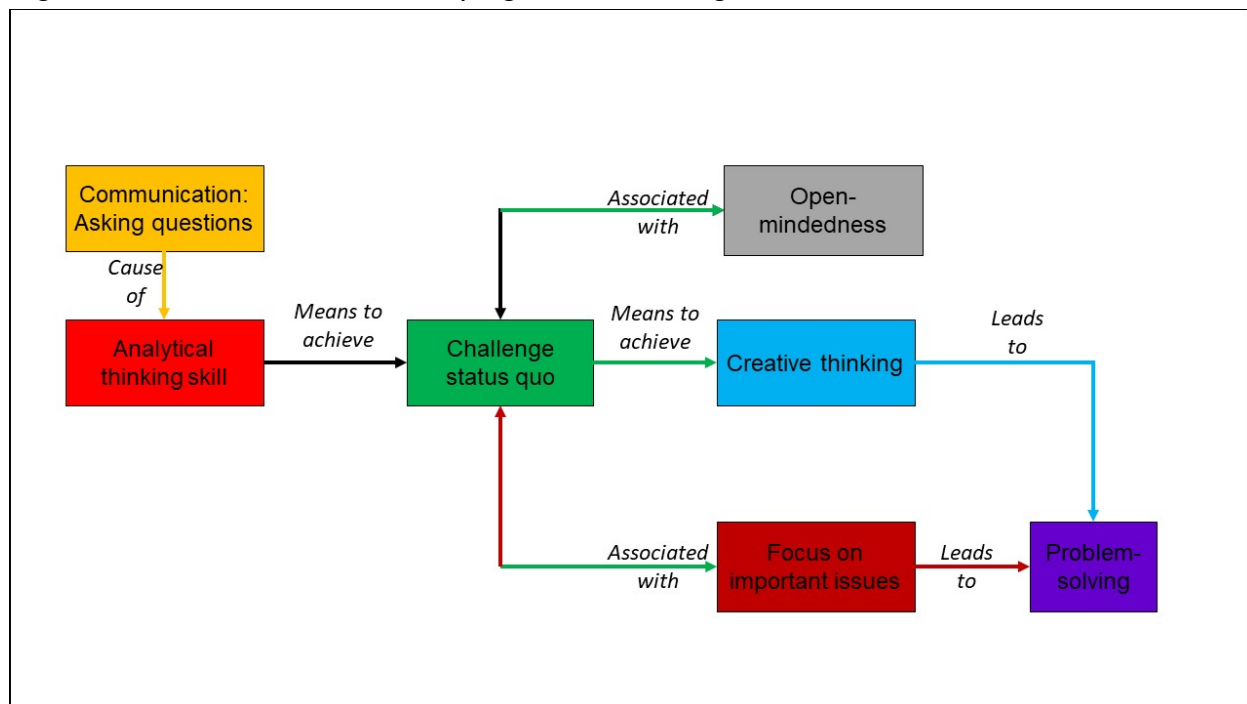
7.4.2.7.2 Mechanism for developing critical thinking skills

Table 7-42: Qualitative finding: Mechanism for development of critical thinking skills

Finding	Empirical support	Theoretical support
All references to the development of critical thinking are in conjunction with the work-integrated learning project, where students were challenged to analyse their workplace and come up with improvements regarding the topics discussed in class. There is conclusive evidence that the WIL project develops critical thinking skills	Quotations are given in Attachment 20.10.6	Work- integrated learning: Paragraph 3.3.4 Critical thinking skills: Paragraph 4.3.7

However, not to be ignored is the relationship between critical thinking skills and the communication skill to ask questions, which has been seen to develop through all three elements of engaged learning, it could be construed that the engaged learning strategy in its totality develops critical thinking skills. Also notable is the causal relationship between critical thinking skills and problem-solving, where critical thinking is a prerequisite to being able to solve problems.

Figure 7-9 Mechanism for developing critical thinking skills



7.4.2.8 Specific theme 8: There is a relationship between different generic skills

From the research, some causal relationships between the different generic skills emerged. In this theme, these are discussed.

Table 7-43: Qualitative finding: Relationship between generic skills

Finding	Empirical support	Theoretical support
The different teamwork skills mentioned seem to all be inter-related and interdependent (for example, coordination enables collaboration and simultaneously collaboration aids coordination. It is clear that the respondents regard communication as one of the core skills contributing towards teamwork. The link between asking questions and teamwork skills is also evident	Quantitative analysis: Paragraph 7.3 Quotations are given in Attachment 20.11.1	Communication skills: Paragraph 4.3.1 Teamwork skills: Paragraph 4.3.2
Communication skills, and specifically the skill to ask questions is a key skill to enable critical thinking.	Quotations are given in Attachment 20.11.2	Communication skills: Paragraph 4.3.1 Critical thinking skills: Paragraph 4.3.7
Communication skills, and specifically the skills to listen and understand questions is strongly related to problem-solving	Quotations are given in Attachment 20.11.3	Communication skills: Paragraph 4.3.1 Problem- solving: paragraph 4.3.4
There is a strong link between cultural awareness and communication, but it seems to be a two-way linkage: Cultural awareness facilitates productive communication (especially listening) with different cultural groups and communication with different groups develops awareness of their cultures.	Quotations are given in Attachment 20.11.4	Communication skills: Paragraph 4.3.1 Cultural awareness: paragraph 4.3.8

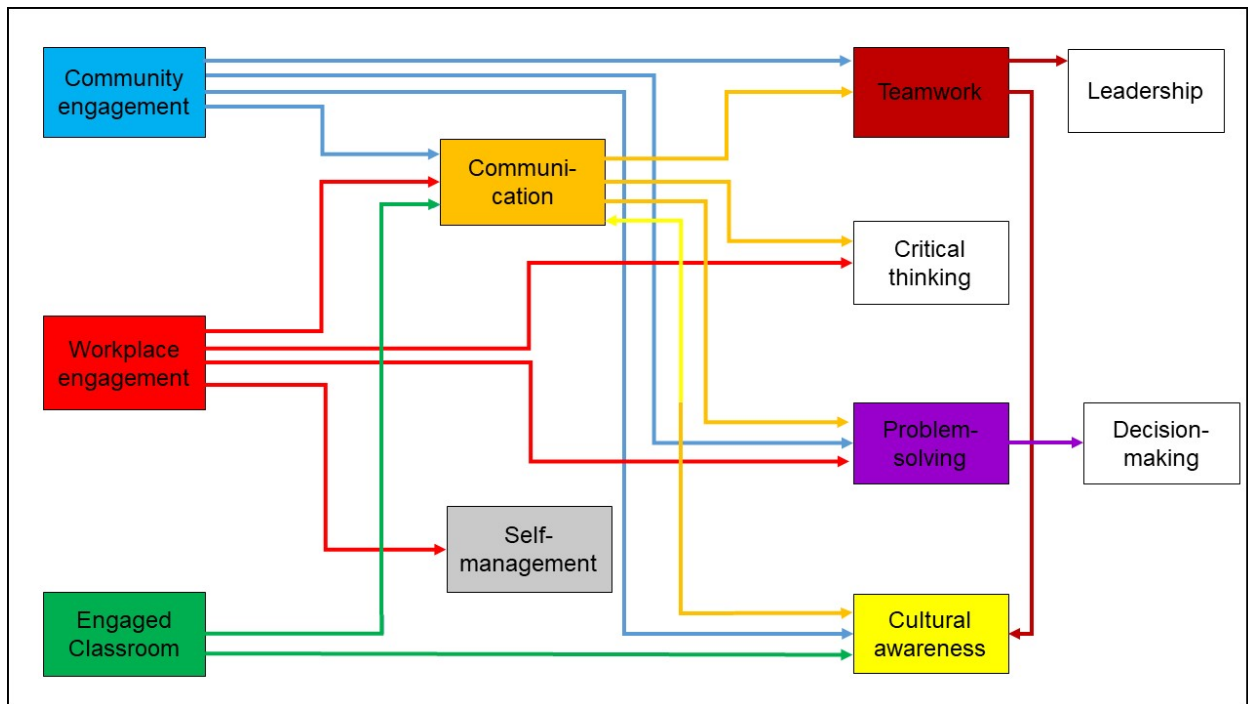
The link between self-management skills and problem-solving skills is that both skill-set involves an important element of goal-orientation and focus.	Quotations are given in Attachment 20.11.6	Problem- solving: paragraph 4.3.4 Self-management paragraph 4.3.6
Being in a diverse team has a positive effect on cultural awareness and the teamwork skills developed in such a team has a positive effect on the development of cultural awareness.	Quotations are given in Attachment 20.11.5	Teamwork skills: Paragraph 4.3.2 Cultural awareness: paragraph 4.3.8
Critical thinking is a requirement for problem-solving, with specifically creative thinking skills and the ability to focus on important issues contributing to problem-solving skills.	Quotations are given in Attachment Error! Reference source not found. 20.12	Problem- solving: paragraph 4.3.4
Leadership was excluded from this study, but a number of participants referred to the leadership development that took place in the group project and in the study group. Working in a team does develop leadership skill.	Quotations are given in Attachment 20.11.8	Teamwork skills: Paragraph 4.3.2 Leadership skills 4.3.3
Although decision-making was originally thought of as being part of problem-solving, and decision-making was therefore not really focused on, it has emerged as one of the skills that develop through engaged learning. One participant even compared the steps in problem-solving to those in indecision-making.	Quotations are given in Attachment 20.11.9	Decision-making skills Paragraph 4.3.5

These relationships are summarised in

Figure 7-10. Note that the colours of the arrows in

Figure 7-10 represent the skill that has an influence on the other skill.

Figure 7-10 Relationships between generic skills



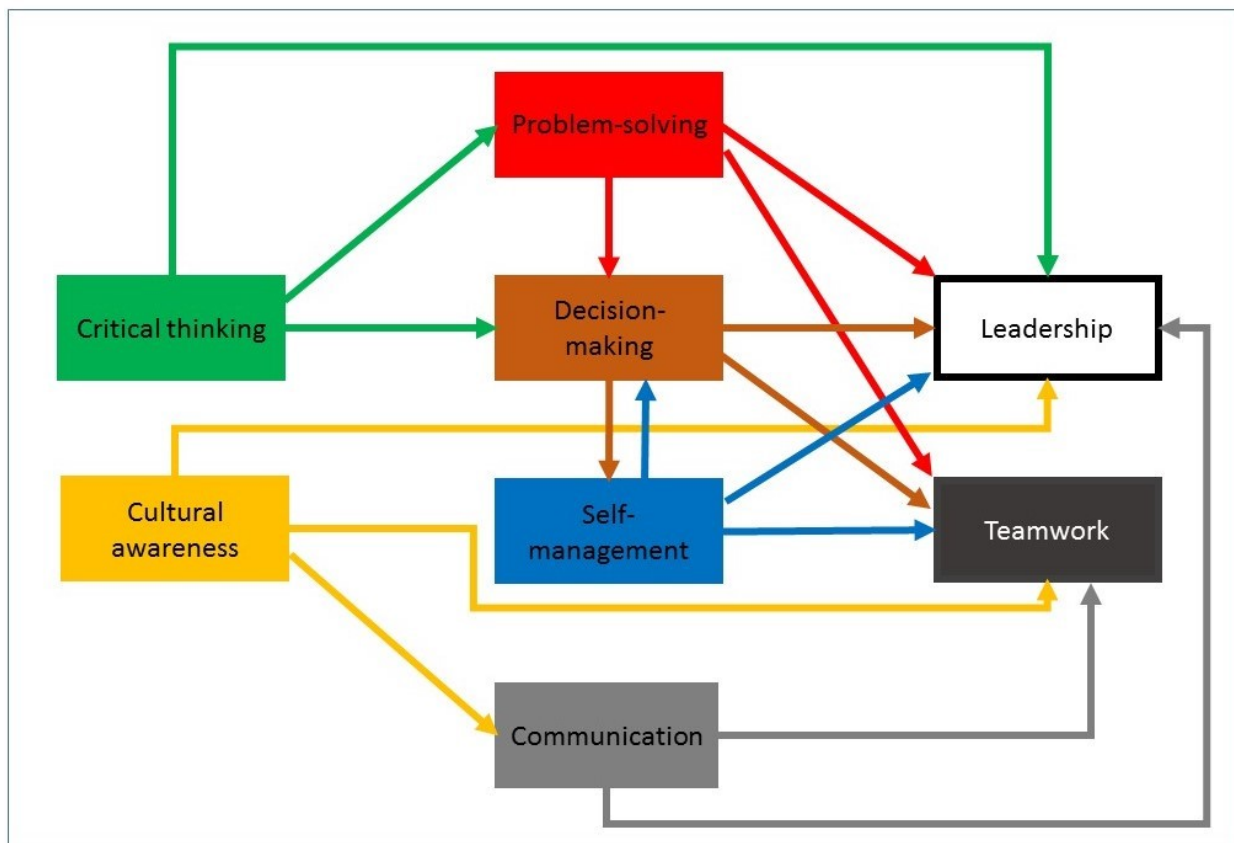
Comparing (shown again below as

Figure 7-11) shows some significant differences: Note that these differences cannot be generalised without further research, as they represent the findings of this study. The most important of these are the following:

- Communication has a far greater roll-on effect on other skills than initially expected, affecting almost every other skill either directly or indirectly.
- Critical thinking is not as much a foundational skill as initially expected, although it does contribute to problem-solving (and therefore per implication to decision-making).
- Cultural awareness has less of a direct effect on other skills than initially expected, and its major contribution is on communication skills. The effect of cultural awareness is therefore indirectly through the significant effect that communication has.
- Self-management skills have far less effect on other skills than initially expected.

These points will be elaborated on in more detail in the final chapter's conclusions.

Figure 7-11 Original expected relationship between generic skills



Source: Repeat of figure 4.4, drawn by the researcher

7.4.2.9 Specific theme 9: The "flipped classroom" is an important enabler of the engaged learning strategy

The flipped classroom in itself did not prove to directly contribute to better learning or development of generic skills per se, but acted as an important enabler for the other elements of the engaged learning strategy.

Table 7-44: Qualitative finding: Effect of the flipped classroom

Finding	Empirical support	Theoretical support
Not the flipped classroom per se, but how the flipped classroom is employed in the engaged learning strategy, leads to improve learning of subject contents. This includes the notion that each student has to submit an assignment before every contact session, consisting of either the application of the theory in his or her workplace or simply a summary of the theory, as well as the notion that each student receives personal voice feedback as part of the flipped classroom on his or her submission, and the fact that those issues that students want to be discussed, as requested in their submissions, are discussed in class. The learning takes place during the feedback and during the discussion of the requested items The largest contributing effect of the flipped classroom is the time it provides in class for engagement exercises, and how it interacts with the workplace engagement project.	Templates for feedback are given in Attachment 4 Quotations are given in Attachment 20.12	Flipped classroom: Paragraph 3.3.8

7.4.2.10 Specific theme 10: Engaged learning facilitates leverage of effort

Quite a number of participants have alluded to the notion that small differences made could have a significant effect, both in the workplace and (especially) in the community organisation.

Table 7-45: Qualitative finding: Leverage of skills

Finding	Empirical support	Theoretical support
Quite a number of participants have alluded to the notion that small differences made could have a large effect, both in the workplace and (especially) in the community organisation. This is in line with what has been found in well-designed WIL and service-learning projects.	Quotations are given in Attachments 20.13.1 and 20.13.2	Work- integrated learning: Paragraph 3.3.4 Service learning: Paragraph 3.3.3

7.4.2.11 Specific theme 11: Mechanism of impact of community engagement project

Similarly, for the investigation of the mechanisms involved in the development of each of the generic skills ensuing from the engaged learning strategy, it is necessary to analyze the three main elements of the strategy and what benefits are derived from each.

To understand the mechanism through which the community project adds enables learning and develops generic skills, more detailed analyses are carried out.

Table 7-46: Qualitative findings: Mechanism of community engagement

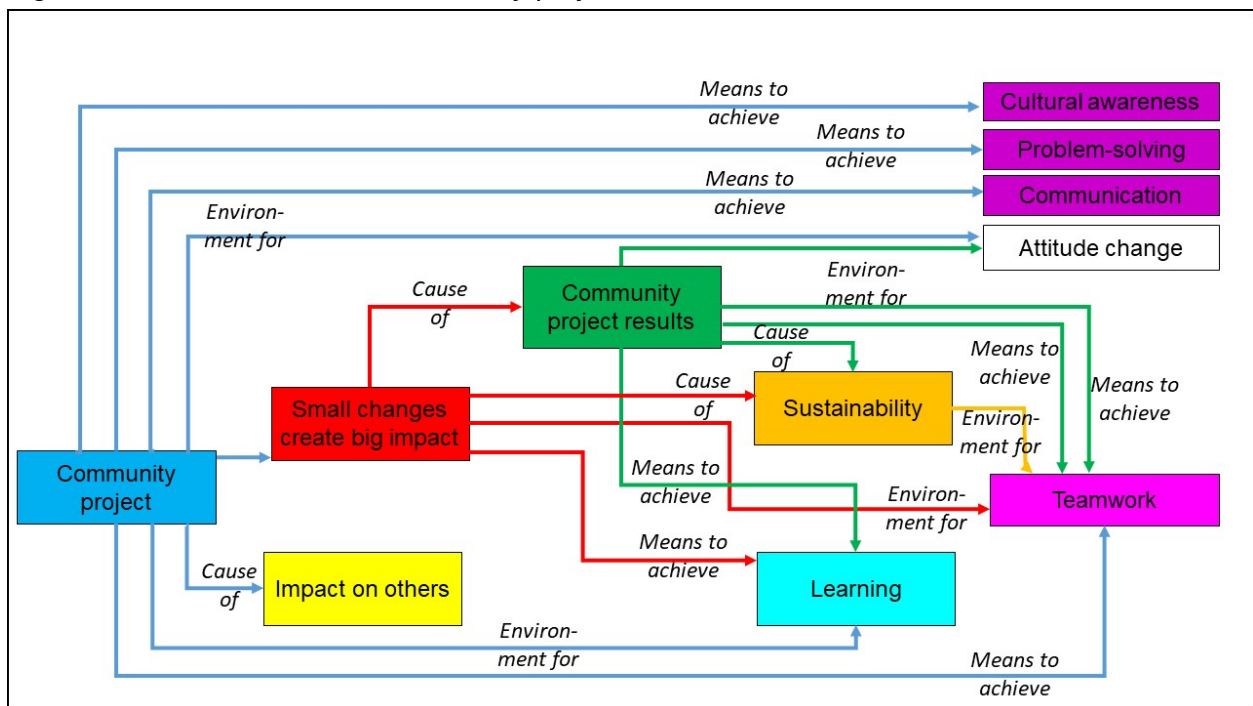
Finding	Empirical support	Theoretical support
There is strong evidence, as already explained in paragraph 7.4.1.3, that participation in the community engagement project does have a big impact on both the community organisation and other stakeholders. The impact on participants includes attitudinal change and other personal and psychological benefits.	Details are discussed in paragraph 7.4.1.3. Quotations are given in Attachment 20.14.1	Service learning: Paragraph 3.3.3
The impact on the organisation has to do with the direct project results, where a small intervention makes a major impact.	Details are discussed in paragraph 7.4.1.3. Quotations are given in Attachment 20.14.2	
The impact that the community project has, seems to be sustainable, both in terms of the benefits to the community organisation, as well as to the participants, who have indicated that they have cultivated a long-term community orientation and that their involvement with the community organisation will endure long after the end of the project.	Details are discussed in paragraph 7.4.1.3. Quotations are given in Attachment 20.14.3	

Finding	Empirical support	Theoretical support
As already described in paragraphs 7.4.1.1 and 7.4.2.1, the community project does enable learning of subject content.	Quotations are given in Attachment 20.1.3	Service learning: Paragraph 3.3.3
The generic skills that have been proven to develop most through the community engagement project, are teamwork, self-management, cultural awareness, problems-solving and communication skills. This has already been discussed in detail in paragraph 7.4.2.8.	Details are discussed in paragraph 7.4.2.8 Quotations are given in Attachment 20.2.1	

The above findings can be summarised in

Figure 7-12. The generic skills developed through the community engagement project are all given in purple. The generic skill that develops most directly through the actual management of the community project is teamwork. The mechanisms through which these skills are developed have already been discussed in detail above. Also ensuing through the group project is subject-related learning (the turquoise block), as well as the impact on the organisation (green block) and on other stakeholders (yellow block).

Figure 7-12 Mechanism how community project adds value



7.4.2.12 Specific theme 12: Mechanism of impact of workplace engagement project

Similarly, to the mechanism of the community engagement element of the engaged learning strategy, an analysis was done on the mechanism through which the workplace engagement activities add value. Issues that have emerged from the qualitative analysis that relate to the workplace project were analysed, and a mechanism is proposed to explain the value derived from the workplace engagement project.

Table 7-47: Qualitative finding: Mechanism of workplace engagement

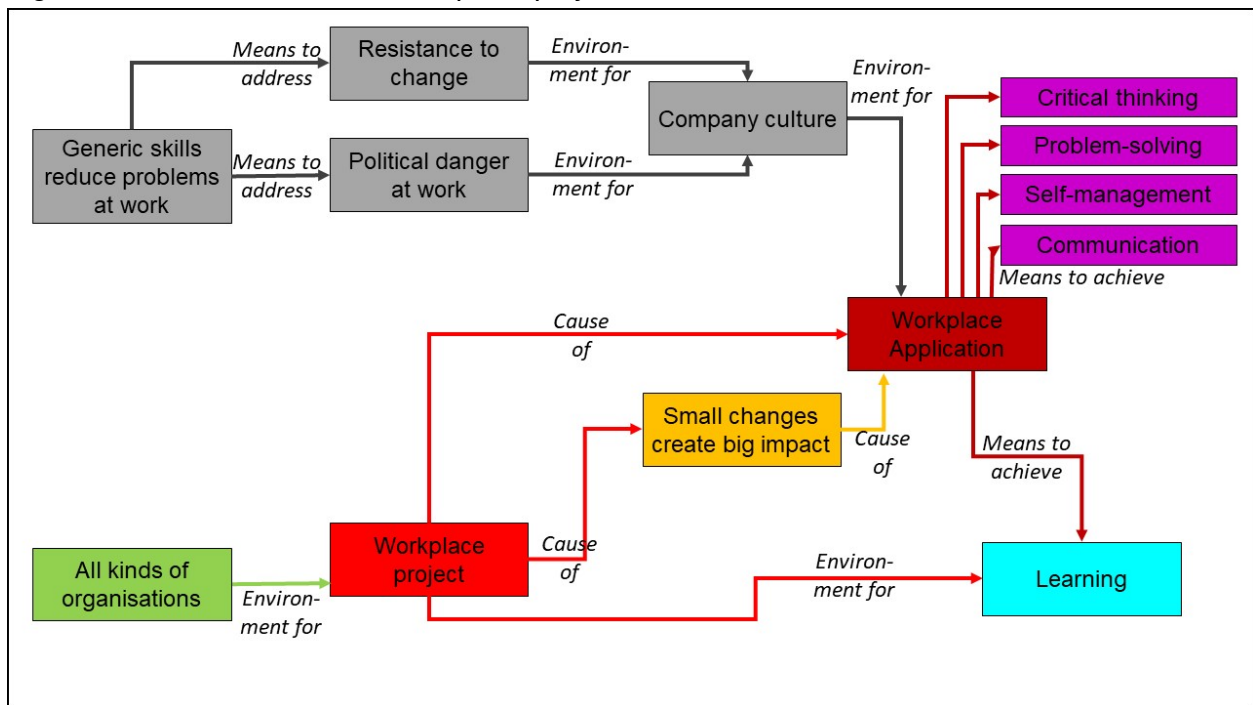
Finding	Empirical support	Theoretical support
An interesting finding that appeared from the data is the effect of organisational dynamics: The first element of organisational dynamics is effect of the organisational culture on the WIL project. This includes the management of resistance to change during the project, as well as the notion that proposing changes in a rigid organisational culture does hold a risk for participants. Participants reported that the productive use of generic skills are a means of addressing these risks, and that by doing that it would have an effect on the culture of the organisation or department where the project is carried out.	Quotations are given in Attachment 20.15.1	Work- integrated learning: Paragraph 3.3.4
A second organisational dynamic that appeared is surprise that the subject principles apply in any kind and size of organisation. (To an extent the community engagement project contributed to this realisation). The way the workplace engagement project was structured, contributed to the application of the theory in the workplace. The notion that the project was linked to an assignment forces participants to get involved in the project and to consistently stay involved. The awareness that improving an organisation does not need to consist of major interventions, but that small interventions could be equally powerful, as well as the organisational insight emerging from this, are other benefits reported by a number of participants.	Quotations are given in Attachment 20.15.2	
As already explained in paragraph 7.4.2.1.3, the workplace engagement project was the largest contributor to subject-related learning. This entailed not just the application of the theory, but also a realisation of the broader context, and a deep insight into the theory and its application.	Quotations are given in Attachment 20.15.3 Details are discussed in paragraph 7.4.2.1.3	

The workplace engagement project does contribute to the development of the generic critical thinking, problem-solving, self- management and communication skills.

The above relationships are depicted in Figure 7-13. The cultural dimension in the organisation is shown in grey, and they must be managed to ensure workplace application of the theory. The workplace project, even consisting of small changes in some cases, contribute to the application of the theory in the workplace and learning. The generic skills ensuing from the workplace engagement project, as already indicated in

Figure 7-10, are critical thinking skills, problem-solving skills, self-management skills and communication skills.

Figure 7-13 Mechanism how workplace project adds value



7.4.2.13 Specific theme 13: Mechanism of impact of classroom engagement activities

The last mechanism that was investigated was the mechanism through which the classroom engagement experience enabled learning and development of generic skills. Included in this analysis was the effect of the flipped classroom approach as an enabler of classroom engagement. The findings are denoted in three major colour schemes in Figure 7-14.

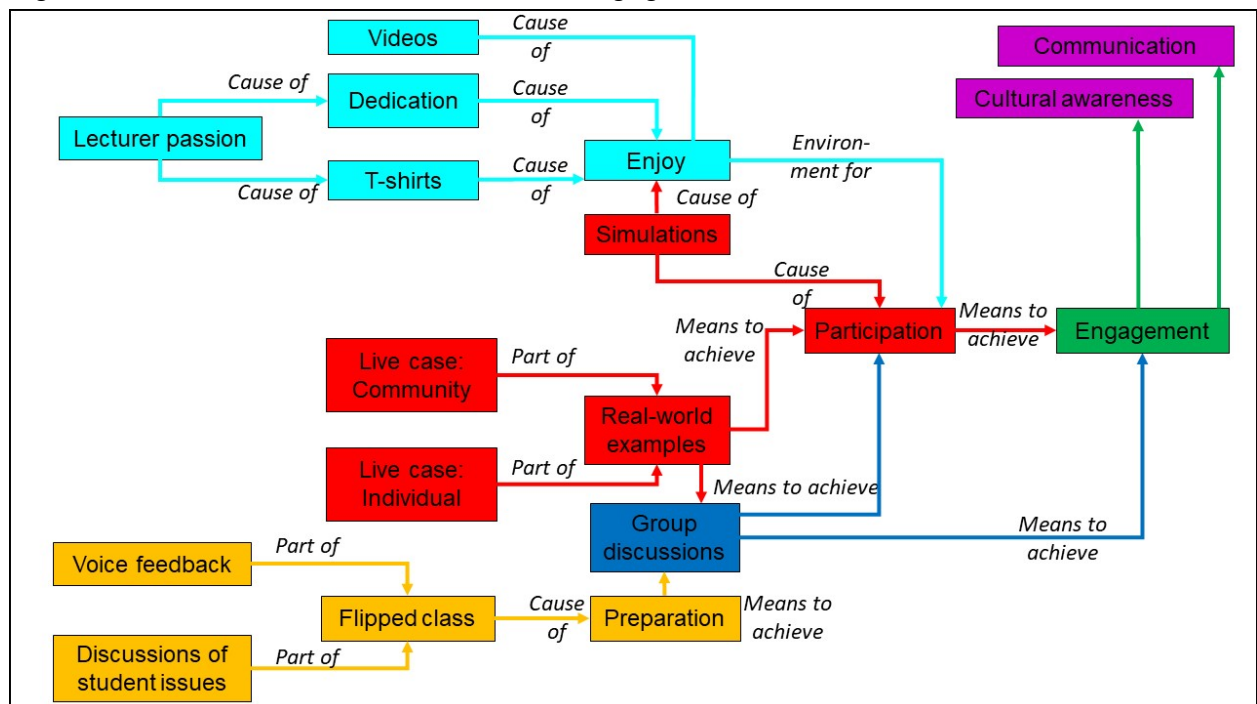
Table 7-48: Qualitative finding: Mechanism of classroom engagement

Finding	Empirical support	Theoretical support
The first finding is that, as already discussed in paragraph 7.4.2.9, the flipped classroom is an important enabler of the classroom engagement activities. The mechanism of this depends strongly on the real-time voice feedback that enables participants to be prepared for class, but also on the notion that, during submissions of assignments that are associated with the flipped classroom approach, participants nominate topics to be discussed in the classroom. The biggest benefits of the flipped classroom is that students are prepared for class and that they can therefore intelligently take part in group discussions in class.	Quotations are given in Attachment 20.16.1, 20.16.2 and 20.16.3	Experiential learning: Paragraph 3.3.1 Games and simulations: Paragraph 3.3.6 Student classroom engagement: Paragraph 3.3.7 Details of real-time feedback are discussed in paragraph 3.5.5
The effect of group discussions on classroom engagement is another finding that stood out from the data. Group discussions are regarded by participants as major sources of engagement, and participation in these discussions are widely commended by participants.	Quotations are given in Attachment 20.16.4	
The second major finding is the effect of the passion of the lecturer on the enjoyment of participants. This is evident in how participants enjoyed the dedication and prayer and the themed t-shirts worn by the lecturer as signs of lecturer passion for his subject	Quotations are given in Attachments 20.16.5, to 20.16.7	
A surprising finding was the effect of enjoyment on engagement, because enjoyment increased participation, which in turn leads to engagement. Contrary to what was expressed in participants in their expectations, there is consensus that enjoyment of the different activities in class does contribute to engaged learning.	Quotations are given in Attachment 20.16.8	
Not surprisingly was there a strong link between simulations and enjoyment, as well as between simulations and participation.	Quotations are given in Attachment 20.16.9	

Finding	Empirical support	Theoretical support
The third major contributor to engagement is participation by students in the classroom. This entailed live case studies from their individual workplace projects and from their group community projects, but also the discussion of other real-world examples in class. Group discussions and simulations and games also contributed to create the environment for participation in the classroom. Also emerging is the effect of carefully selected videos, live case studies and other real-world examples as a teaching method.	Quotations are given in Attachment 20.16.10, 20.16.11, 20.16.12, 20.16.13 and 20.16.14	Experiential learning: Paragraph 3.3.1 Games and simulations: Paragraph 3.3.6 Student classroom engagement: Paragraph 3.3.7 Details of real-time feedback are discussed in paragraph 3.5.5
The final finding is that classroom engagement contributes to the development of communication and cultural awareness skills. The contribution to other generic skills is not supported by the data.	Quotations are given in Attachment 20.16.15	

The above findings are summarised in Figure 7-14, with the flipped classroom activities shown in orange, the effects of lecturer passion in turquoise and any activities that lead to participation in red.

Figure 7-14 Mechanism how the classroom engagement adds value

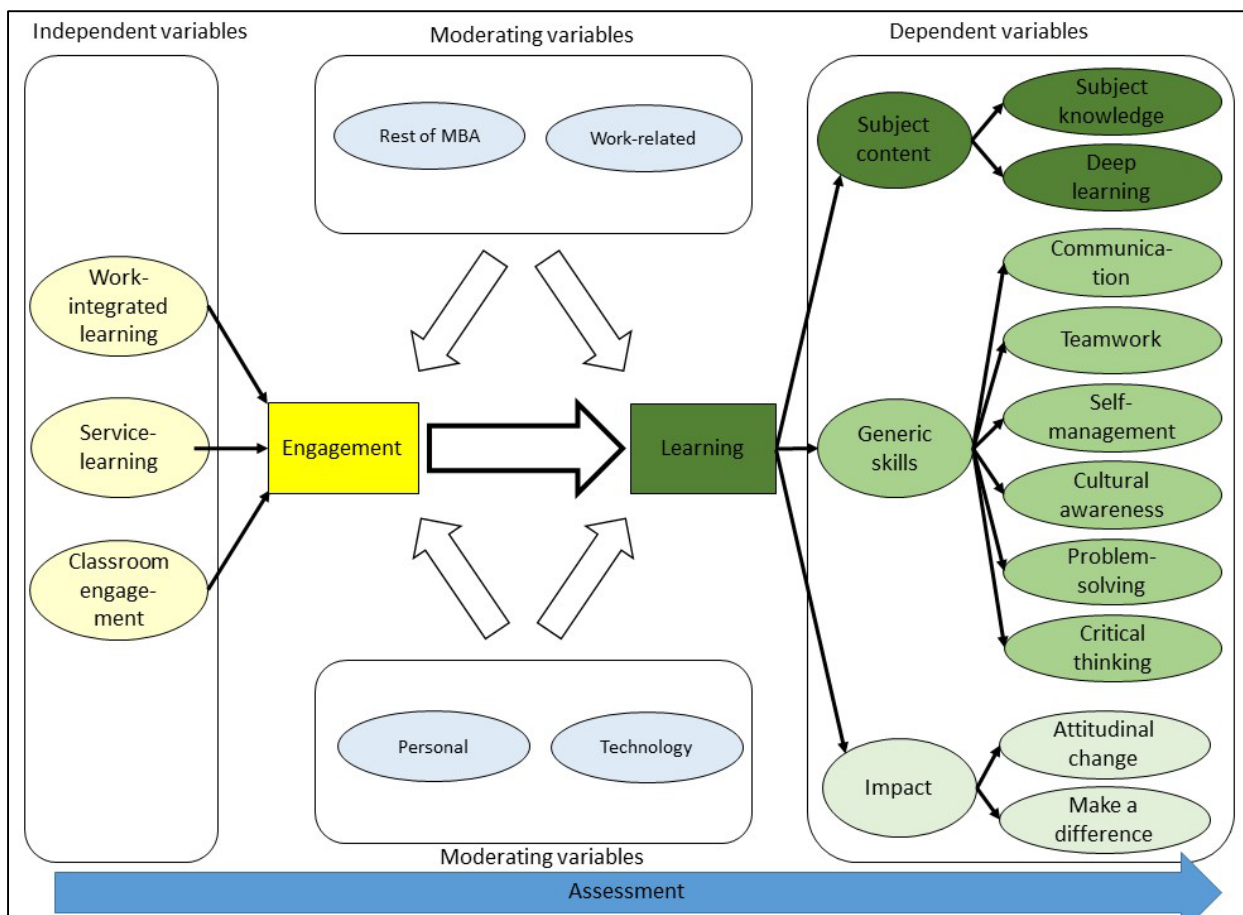


7.4.3 Summary of qualitative findings

In summary, the findings of the qualitative study confirm that the engaged learning strategy, consisting of community engagement projects, carried out in groups, workplace engagement projects, carried out individually and classroom engagement activities do contribute to learning of subject content, but also to learning defined in a broader context as the acquisition of specific generic skills. The effect of personal engagement on learning has not been confirmed by the data.

Furthermore, a mechanism for the elements of the engaged learning strategy has been proposed from the data. In the case of problem-solving skills, leadership and decision-making there is not sufficient data to propose a mechanism for these three generic skills. A mechanism has also been proposed for how learning takes place during the engaged learning strategy. Those mechanisms that have been proven are shown in colour in Figure 7-15, with those that could not be proven removed.

Figure 7-15 Proven mechanisms for engaged learning strategy



7.5 Triangulation

The intervention that was at the heart of this research is the implementation of a strategy for engaged learning, consisting of a community engagement project, a workplace engagement project and a number of classroom engagement activities, with the objective that the intervention should result in learning of subject principles and learning in general: development of specific generic skills.

In paragraph 7.2, the quantitative findings were presented, which proves statistically that there is a statistically significant and practically significant improvement in subject knowledge, as well as in the level of generic skills exhibited, whether the difference is measured between the pre-test and the post-test, or whether it is measured between the retrospective pre-test and the post-test. Also found in the quantitative study was that the benefits did not depend on whether students attend block-release classes or fortnightly classes, that the same benefits ensued for students who work in the private and public sector and that even class attendance did not have a significant effect on the learning and skills development. The only difference found was (with the exception of teamwork skills) that there was significant learning, as well as significant development of generic skills between those students who have just completed another course in the same subject during the previous semester and those who did not. These were documented as ten quantitative findings.

In paragraph 7.4 these results were investigated in more depth, and the mechanisms involved in the learning and development of skills were studied using qualitative content analysis. Also emerging during the content analysis was the development of critical thinking skills, benefits accruing to all parties in the process, the limited effect of the flipped classroom on learning and skills development, and the effect of the community engagement project, workplace engagement project and classroom engagement activities on learning and skills development. These findings were documented as three general themes and ten specific themes.

In Table 7-49 the findings from the quantitative method and the themes from the qualitative method are compared to determine which of them address common issues and which are not supported by the alternative research method.

Although the quantitative and qualitative data collection instruments have each been found to be valid and reliable, triangulation per se validates the research. In the comparison below it is shown that the quantitative and qualitative results are aligned, which adds to its validity.

Table 7-49 Comparing quantitative and qualitative findings

	Quantitative findings	QUANT 1	QUANT 2	QUANT 3	QUANT 4	QUANT 5	QUANT 6	QUANT 7	QUANT 8	QUANT 9	QUANT 10
Qualitative findings		Learning	Communication	Teamwork	Self-management	Cultural awareness	Problem-solving	Mode of delivery	Employment sector	Class attendance	Prior exposure
General theme 1	Learning	a						b	c	d	e
General theme 2	Generic skills		f	g	h	i	j	k	l	m	n
General theme 3	Benefits										
Specific theme 1	Deep learning	o									
Specific theme 2	Asking questions		p								
Specific theme 3	Community teamwork			q							
Specific theme 4	Cultural awareness				r						
Specific theme 5	Problem-solving					s					
Specific theme 6	Time management						t				
Specific theme 7	Critical thinking										
Specific theme 8	Relationship between skills		u	v	w	x	y				
Specific theme 9	Flipped classroom										
Specific theme 10	Leverage of effort										
Specific theme 11	Community engagement										
Specific theme 12	Workplace engagement										
Specific theme 13	Classroom engagement										

a and o. Quantitative finding 1, that learning resulted from the intervention and described in paragraph 7.3.1, showed that the post-test indicated a statistically significant (t-test $p < 0.001$) and practically significant (very large effect size: t-test eta squared = 0.87) improvement in subject knowledge. This was also seen in general theme 1, where the qualitative responses gave strong evidence of learning that took place. Described in specific theme 1 was the mechanism, suggested by the qualitative responses and depicted in

Figure 7-5, through which the engaged learning strategy results in improved learning.

- b. In quantitative finding 7, another t-test ($p = 0.06$), the results of which could not be confirmed by the qualitative research other than that participants receiving both block-release tuition and fortnightly classes reported learning in general theme 1, showed that the mode of delivery did not result in any statistically significant difference in the learning that ensued. The low value of eta squared (0.03) showed that the difference between the learning block-release tutored students and fortnightly tutored students is also not practically significant.
- c. In quantitative finding 8, another t-test ($p = 0.10$), the results of which could not be confirmed by the qualitative research other than that participants employed in both the private and public sector reported learning in general theme 1, showed that where participants are employed does not contribute to any statistically significant difference in the learning that ensued. The low value of eta squared (0.03) showed that the difference between the learning achieved by private sector-employed and public sector-employed students is also not practically significant.
- d. In quantitative finding 9 the learning by students who attended all the contact sessions was compared to that achieved by students who missed one or more classes. The difference between these groups was also neither statistically significant ($p = 0.07$) nor practically significant (eta squared = 0.03). No qualitative responses indicate that participants missing contact sessions learnt less than those that attended all sessions.
- e, n and p. In qualitative finding 10, that respondents who had prior exposure to a course in the same subject during the year preceding the intervention experience learned less than those who did not have such exposure, the difference between learning achieved by the two groups was statistically significant (t-test, $p = 0.03$), but not practically significant, (eta

squared = 0.05). This was not specifically substantiated by the qualitative general theme 1, but was mentioned in specific theme 1, where participants, who did attend the course the previous year, saw this course as an extension of the previous course, and hence experienced less learning than those who did not attend the previous year's course. The mechanism of learning, given in

Figure 7-5 also mentions the effect of prior knowledge.

f and q. Quantitative finding 2, that communication skills did develop during the intervention and described in paragraph 7.3.2, showed that the post-test indicated a statistically significant improvement relative to both the pre-test and the retrospective pre-test (ANOVA $p < 0.001$, $F = 52.78$), as well as a practically significant improvement (eta squared = 0.615). This was also seen in qualitative general theme 2, discussed in paragraph 7.4.1.2, which showed that generic skills in general have developed, but also that communication skills have developed through the engaged learning strategy. Specific theme 2, discussed in paragraph 7.4.2.2, described the mechanism involved in the development of communication skills through the engaged learning strategy from the perspective of participants and depicted in

Figure 7-6, where it was found that the core communication skill is the skill to ask questions.

g and r. Quantitative finding 3, that teamwork skills did develop during the intervention and described in paragraph 7.3.3, showed that the post-test indicated a statistically significant improvement relative to both the pre-test and the retrospective pre-test (ANOVA $p < 0.001$, $F = 79.19$), as well as a practically significant improvement (eta squared = 0.71). This was also seen in qualitative general theme 2, discussed in paragraph 7.4.1.2, which showed that generic skills, in general, have developed, but also that communication skills have developed through the engaged learning strategy. Specific theme 3, discussed in paragraph 7.4.2.3, described the mechanism involved in the development of teamwork skills through the engaged learning strategy from the perspective of participants and depicted in Figure 7-7, where it was found that the most important enabler of teamwork skills is the community engagement project.

h and s. Quantitative finding 4, that self-management skills did develop during the intervention and described in paragraph 7.3.4, showed that the post-test indicated a statistically significant improvement relative to both the pre-test and the retrospective pre-test (ANOVA $p < 0.001$, $F = 89.11$), as well as a practically significant improvement (eta squared = 0.73). This was also seen in qualitative general theme 2, discussed in paragraph 7.4.1.2, which showed that generic skills, in general, have developed, but also that self-management skills have developed through the engaged learning strategy. Specific theme 4, discussed in paragraph 7.4.2.4, described the mechanism involved in the development of self-management skills through the engaged learning strategy from the perspective of participants and depicted in

Figure 7-8, where it was found that the self-management skill that develops most is time-management skill.

i and t. Quantitative finding 5, that cultural awareness skills did develop during the intervention and described in paragraph 7.3.6, showed that the post-test indicated a statistically significant improvement relative to both the pre-test and the retrospective pre-test (ANOVA $p < 0.001$, $F = 42.96$), as well as a practically significant improvement (eta squared = 0.57). This was also seen in qualitative general theme 2, discussed in paragraph 7.4.1.2, which showed that generic skills, in general, have developed, but also that communication skills have developed through the engaged learning strategy. Specific theme 5, discussed in paragraph 7.4.2.5, described the mechanism involved in the development of cultural awareness skills through the engaged learning strategy from the perspective of participants and depicted in Figure 7-9, where it was found that the participants were already involved in diverse groups in the workplace, and therefore cultural awareness skills developed less than other generic skills during the intervention.

j and u. Quantitative finding 6, that problem-solving skills did develop during the intervention and described in paragraph 7.3.6, showed that the post-test indicated a statistically significant improvement relative to both the pre-test and the retrospective pre-test (ANOVA $p < 0.001$, $F = 55.68$), as well as a practically significant improvement (eta squared = 0.635). This was also seen in qualitative general theme 2, discussed in paragraph 7.4.1.2, which showed that generic skills, in general, have developed, but also that communication skills have developed through the engaged learning strategy. Specific theme 6, discussed in paragraph 7.4.2.6, described the evidence that problem-solving skills have developed, but no mechanism for the development of problem-solving skills could be discerned.

v to z and ff. Quantitative findings 2 to 6 show that communication, teamwork, self-management, cultural awareness and problem-solving skills have all developed significantly, as described in paragraphs 7.3.2 to 7.3.6, and quantitative finding 11, described in paragraph 7.3.11 shows that there is a positive correlation between the development of the different generic skills. Qualitative specific theme 8, described in paragraph 7.4.2.8, shows the links between the different generic skills. These links are depicted in

Figure 7-10, showing that the generic skill that contributes most to other generic skills is the communication skill to ask questions.

Other points about this matrix:

- aa Critical thinking, analysed in qualitative specific theme 7, as discussed in paragraph 7.4.2.7, was originally not intended to be included in the measurement of generic skills, and therefore it was excluded from the quantitative questionnaire, but it featured so strongly in the qualitative responses that it had to be included. It does not triangulate with any quantitative results.
- bb The flipped classroom, analysed in qualitative specific theme 9, as discussed in paragraph 7.4.2.9, could not be correlated to any learning or development of generic skills as such, but it acts as an enabler for the classroom engagement. It does not triangulate with any quantitative results.
- cc The leveraging of effort that was observed in the qualitative study, as discussed in specific theme 10 and described in paragraph 7.4.2.10, refers to the community engagement project and the workplace engagement project, and therefore it does not triangulate with any quantitative results.
- dd The effect of the three elements of engaged learning was not discussed in the quantitative findings and therefore does not triangulate with any quantitative results.
- ee There is a possible link between quantitative finding 9 (class attendance not contributing to either learning or development of generic skills) and classroom engagement activities, analysed in paragraph 7.4.2.13. This link could be that classroom engagement activities contribute less to engaged learning than the other two elements, but this result is not part of this study and has to be investigated in greater detail.

7.6 Chapter conclusion

In this chapter, it was shown in the quantitative analysis that learning did take place during the intervention and that generic skills did develop during the intervention. This result was investigated in greater depth during the qualitative analysis, and the qualitative results not only provide proof of the learning and skills development that took place, but it also suggests

mechanisms through which this took place. Furthermore, the qualitative analysis investigated the three engagement elements of the engaged learning strategy and suggested mechanisms through which these three elements ensure learning and generic skills development. These findings were all supported by the literature study done in chapters 2 to 5, and they support the engaged learning model, given in Figure 7-3.

In this chapter, the fifth secondary objective of the study (evaluation of the success of the engaged learning strategy) is met. The contribution of this chapter is, therefore, that it provides empirical proof of the success of the strategy.

In the final chapter, conclusions are drawn from these findings, recommendations are made and the contribution of the study, including the meeting of research objectives, is elicited.

7.7 Chapter summary

In this chapter, the strategy for engaged learning was tested quantitatively through a questionnaire that was validated and found to be reliable. Through repeated sample ANOVAs and t-tests, it was found that not only did learning of subject material ensue, but that all the generic skills included in the questionnaire did develop. In all cases, the results were both statistically and practically significant. Following this, the results were triangulated through content analysis of reflection reports and mechanisms for the learning, development of generic skills and working of the different elements of the engaged learning strategy were proposed. The qualitative analysis not only confirms the quantitative results, but also provided a deeper insight into the mechanisms involved when the strategy for engaged is employed.

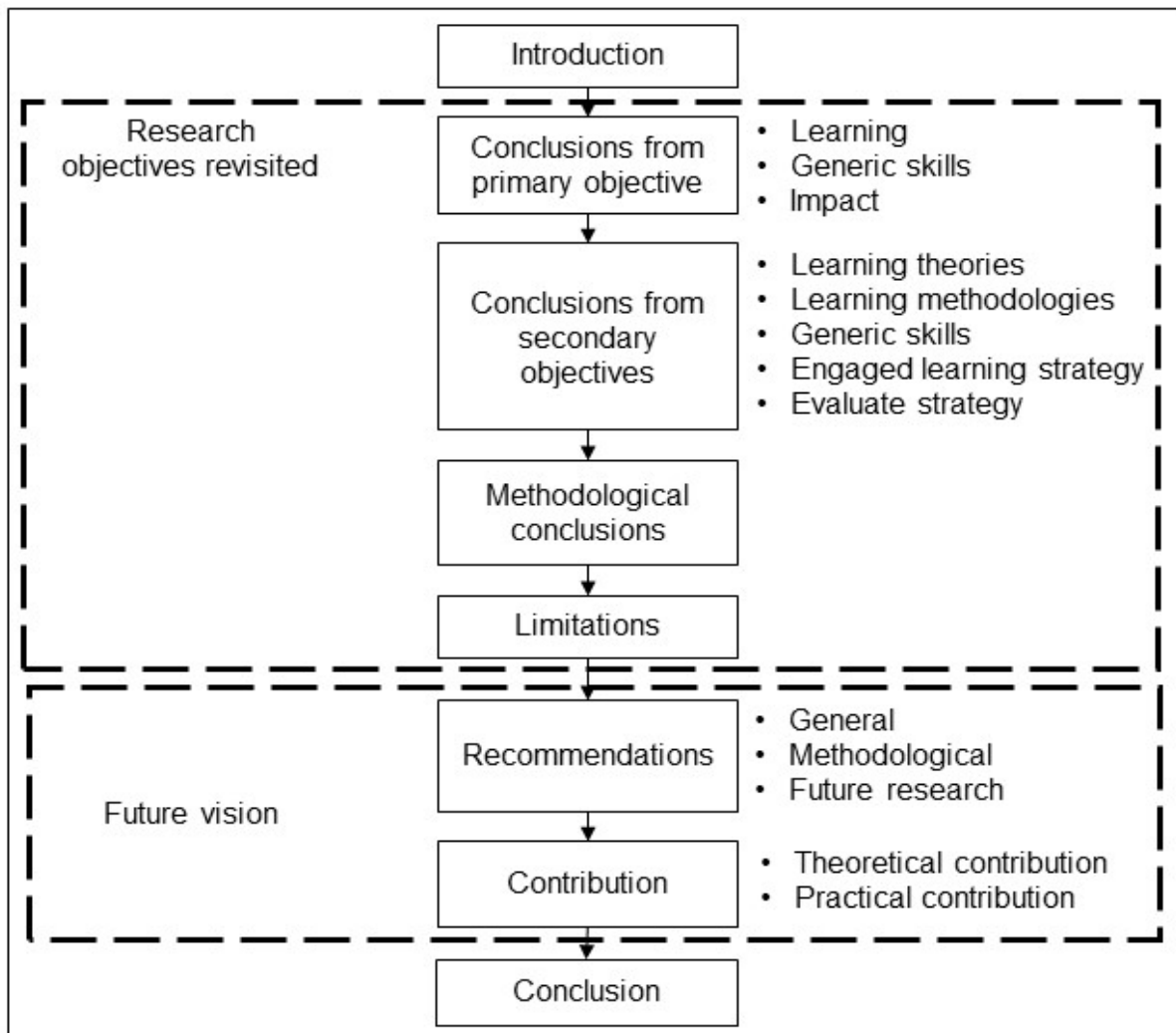
CHAPTER 8

A FINAL VERDICT ON THE STRATEGY FOR ENGAGED LEARNING: CONCLUSIONS, RECOMMENDATIONS AND CONTRIBUTION

8.1 Introduction

In this final chapter, the study is concluded to whether the results prove that the objectives of the study have been met. By doing that, a judgement can be passed on the contribution of the study to science and to practice.

Figure 8-1: Structure of chapter 8



Since this study focused on engaged learning in an MBA programme and the development of generic skills, all decisions pertaining to the execution of this study related to these two focuses. In this study, it was determined that learning is more than only the acquisition of subject knowledge. Although gaining subject knowledge is a vital part of learning in an academic context, learning also includes the attainment of the generic skills required by the working environment in which the students are functioning. A third element of learning, namely that learning needs to have an impact, is also addressed in this study.

To determine whether the strategy for engaged learning leads to learning, the strategy has been researched from the basis of andragogic principles, the most prominent learning theories (chapter 2) and the learning methodologies and technologies (chapter 3). Extracting the principles that could be applicable to a strategy for engaged learning from these, the objective of learning, going beyond simple academic content, has been explored and a number of generic skills that should result from the strategy, have been identified (chapter 4). From this information, a strategy was formulated, using various engagement elements, such as community engagement, workplace engagement, classroom engagement, and personal engagement, in order to achieve improved learning of academic content, the development of generic skills (chapter 5) and have a broader impact. An implementation plan has also been proposed (chapter 5), and the strategy was implemented in an MBA Operations Management class at a business school that offers face-to-face teaching.

This strategy was evaluated during an intervention over the period of six months using QUANT/qual mixed methods research, as described in chapter 6, where the primary research method was a statistical analysis of a pre-post quantitative questionnaire, to establish whether learning has ensued. These results were triangulated with the content analysis of reflection reports, to obtain a deeper understanding of the mechanisms involved in this learning process. The findings are provided in chapter 7.

In this chapter the final conclusions are reached, recommendations are proposed, and the contribution of the study is examined.

8.2 The research objectives revisited

In chapter 1 the objectives of the study were set. An analysis of the attainment of these objectives, to be elucidated below, is necessary to establish the contribution of the study to the body of knowledge.

8.2.1 Primary objective

The primary objective of this study was to formulate, implement and evaluate a strategy for engaged learning in an MBA programme.

To achieve this primary objective, it cascaded into five secondary objectives, which will be discussed further in the subsequent paragraphs below.

8.2.2 Secondary objectives

8.2.2.1 Objective 1: Examine and identify the relevant learning theories that could contribute to a strategy for engaged learning in an MBA programme

This objective was achieved in chapter 2 of the study, where a detailed examination of the principles of andragogy, the dominant epistemologies and learning theories from ancient Confucian, Biblical, Greek, Roman and Egyptian theories, through behaviourism, cognitivism and constructivism to the 21st-century connectivism were analysed. This analysis was summarised in Table 2-1, where all the elements that could be included in a strategy for engaged learning were extracted from the different learning theories. Findings in this regard reveal that the most important elements from the different epistemologies that could be employed in an engaged learning strategy are:

- From andragogy, the use of their environment as the learning context;
- From objectivism, the use of group discussions;
- From behaviourism, to take them out of the classroom into the real world;
- From cognitivism, the roots of experiential learning and group work;
- From constructivism, the principles of community engagement and workplace application, reflection and debates; and
- From connectivism, use of technology and the principles of real-time feedback.

8.2.2.2 Objective 2: Examine and identify learning methodologies that could become part of an engaged learning strategy

This objective was achieved in chapter 3, where the different learning methodologies were examined. The applicability of each methodology was evaluated and then summarised in Table 3-1. This enabled the researcher to identify the elements that could form part of the engaged learning strategy.

Findings in this regard reveal that the most important methodologies that could be employed in an engaged learning strategy are:

- Experiential learning: Learning in the workplace or another setting;
- Service-learning: Group work, application in community engagement;
- Work-integrated learning: Application in your own work environment;
- Games and simulations: Increasing engagement;
- Classroom engagement: Group work, projects, participation exercises, real-time assessment, engaging tasks;
- The flipped classroom, Self-directed learning;
- Reflective practice: Structured reflection; and
- Technology: Use of LMS and multimedia, blended learning, voice feedback.

8.2.2.3 Objective 3: Identify those generic skills required of MBA graduates that could be developed through an engaged learning strategy

This objective was set to ensure that the strategy for engaged learning provides learning that goes beyond mere subject content, and to provide a yardstick to measure the success of the strategy against. In chapter 4 this objective was achieved, where relevant literature on generic skills (also referred to as graduate attributes) was perused, and a list of required generic skills for MBA graduates was compiled. This list was refined and built into the model representing the strategy for engaged learning. From this list, the portion of the questionnaire that was used to evaluate whether the strategy really develops generic skills was compiled. Findings in this regard reveal that the generic skills that could be developed through an engaged learning strategy include communication skills, teamwork skills, self-management skills, cultural awareness skills, problem-solving skills, and critical thinking skills.

8.2.2.4 Objective 4: Propose an engaged learning strategy and provide an implementation plan for the engaged learning strategy

This objective was achieved in chapter 5, where the strategy was described, and an implementation plan was prepared. The engaged learning strategy is summarised in **Error! Reference source not found.** and later amended as summarised in Figure 7-3.

8.2.2.5 Objective 5: Evaluate the proposed engaged learning strategy

The final secondary objective was to evaluate the proposed engaged learning strategy. The evaluation of the strategy was integrated with the implementation of the strategy during an intervention over six months. It was decided to use QUANT/qual mixed methods to gauge the success of the strategy, since the quantitative research revealed whether learning ensued, while the qualitative content analysis of reflection reports revealed the mechanisms of the learning that resulted from the strategy for engaged learning. In chapter 6 the method for evaluating the learning that resulted from the intervention was described, and in chapter 7 the results and findings were expounded. Since the strategy was designed to lead to learning, this included an analysis of both subject content learning and the development of generic skills.

The general conclusion that could be reached from the evaluation of the strategy is that subject knowledge is acquired and applied, generic skills are developed when students are subjected to the engaged learning strategy, and the strategy also leads to a broader impact. This conclusion is motivated and elucidated in the subsequent paragraphs (par. 8.2.2.5.1 – 8.2.2.5.3).

8.2.2.5.1 Subject learning ensues through engaged learning

Quantitative proof of the learning that takes place was discussed in paragraph 7.3.1.

Independent sample t-test on the learning also revealed that when the learning was compared between those students that attended their classes in a block-release format and those that attended fortnightly classes, there was no significant difference between the two groups (neither statistically significant nor practically significant). As long as the mode of teaching is face-to-face, the scheduling does not prevent learning.

Another independent sample t-test comparison between those who attended all the classes and those who missed one or more contact sessions revealed that not attending all the classes did

not have a significant adverse effect on the learning of students. This conclusion could have significant implications, because it might mean that the engaged learning strategy could be suitable for online courses too. However, this statement would need to be investigated further before it could be proven statistically that the engaged learning strategy is suitable for online distance learning.

Comparing the learning experience of students who are employed in the private sector with their counterparts in the public sector, no significant difference could be detected, based on an independent sample t-test. This applies to both statistical and practical significance. Students employed in both sectors have had the same learning experience during the intervention.

The only independent sample t-test that yielded significant differences between groups was a comparison of the learning that took place between students that were exposed to a course in the same subject the semester prior to the intervention, and those who were not exposed to such a course. Although differences had no practical significance, the learning ensued amongst students without the exposure to the subject content was statistically significantly higher than the learning of students that were exposed to the content recently before the intervention.

There is also substantial proof from the qualitative analysis that the learning succeeding from the strategy resulted in an acquisition of subject knowledge, to such an extent that the learning does not just show in theoretical subject knowledge, but it also translates to the understanding and application in the participants' work environments and their private lives. With the abundant knowledge available on the Internet, acquisition of subject knowledge is becoming less relevant in an MBA programme (Encio *et al.*, 2016:104), and for face-to-face offerings to stay relevant, learning should extend beyond the acquisition of mere subject knowledge. The qualitative research confirmed that learning did take place and that the knowledge is being applied by participants.

8.2.2.5.2 Generic skills develop through engaged learning

In paragraphs 7.3.2 to 7.3.6 it was confirmed, using a one-way repeated ANOVA, that generic skills develop through engaged learning.

When the development of generic skills was compared between those students that attended their classes in a block-release format, and those that attended fortnightly classes, using a mixed between-within subjects ANOVA, there was no significant difference between the two groups

(neither statistically significantly, nor practically significantly). As long as the mode of teaching is face-to-face, the scheduling does not make a difference in the development of generic skills.

Comparing the development of generic skills amongst students from different employment sectors (public versus private sector), using mixed between-within subjects ANOVAs, no statistically significant difference was found between the two groups either. There was only a small practically significant difference between the development of problem-solving skills of these two groups, with participants from the public sector gaining more skills than those from the private sector. For all the other skills measured, the difference between the two sectors was practically not significant either.

A similar ANOVA proved that students who do not attend all classes did not develop less generic skills, compared to their peers who attended all the classes. This could imply that the strategy for engaged learning could be suitable for developing generic skills amongst distance learning students, but before that could be asserted, it needs to be investigated further.

However, students with exposure to the subject during the semester just before the intervention, reported generic skills development that was significantly higher (statistically and practically significance) to those experienced by students without exposure to the subject one semester before the intervention. The major difference between the scores of these two groups is that the initial level of generic skills exhibited by those without previous exposure was considerably higher than those who attended the course the previous semester. This could be due to their exposure to situations where generic skills develop in their professional capacity. However this statement warrants further investigation.

Although more than one skill developed during the intervention, it is possible that not all of these were measured. For example, the measurement of critical skills, leadership skills and decision-making skills were not included in the questionnaire, although it could be possible that other skills that were not mentioned anywhere in the study also have developed. The reasons for excluding critical thinking, leadership and decision-making from the study were given in paragraph 6.7.3.2.2. However, as was reported in chapter 2, generic skills are not discrete units, and some of the skills that are classified as one generic skill could be part of another skill. An example is the skill to ask questions, which is essentially a communication skill, is as much part of the set of teamwork skills and of problem-solving skills. It was therefore expected that, when generic skills were classified as communication, problem-solving, cultural awareness, teamwork and self-management skills, there would be some overlap between these skills, as confirmed by both the quantitative and the qualitative research.

Although the original study only included the generic skills of communication, teamwork, problem-solving, cultural awareness, and self-management, the evidence on the development of critical thinking skills was so compelling that critical thinking was included in the qualitative analysis halfway during the intervention. Other generic skills that were mentioned by participants, are leadership skills, decision-making skills, networking skills and planning skills.

Pertaining to further quantitative results, there is a statistically significant positive correlation, shown in Table 7-14 between the development of the different generic skills reported during the intervention. The only exception was the development of teamwork skills, which exhibited a weak correlation with all the other skills, except for communication. Although the correlation between teamwork skills and problem-solving skills was not statistically significant, this warrants further investigation.

An important finding was also the statistically significant positive correlation that is evident between the development of all the generic skills and the learning of subject material, albeit a smaller correlation than between the different generic skills mutually.

The relationship between the different skills also emerged strongly from the qualitative analysis. Where the quantitative analysis simply proved that there is a correlation between the different generic skills, the qualitative analysis gave some insight into this relationship, as well as into the effect that the three elements of the engaged learning strategy have on the development of the different generic skills. From the literature study, a possible link between the different skills was proposed, as shown in Figure 4-5 (which was repeated in

Figure 7-11), and the qualitative research confirmed some of the links, although some of these links were refuted in the qualitative analysis. The links that emerged from the qualitative analysis are given in

Figure 7-10, and can be summarised as follow:

- Communication skills are key to teamwork skills (and per implication therefore also to leadership skills), critical thinking, problem-solving skills (and therefore also to decision-making skills as a subset of problem-solving), and to cultural awareness.
- Self-management has little effect on any of the other generic skills.
- Rather than cultural awareness being responsible for teamwork, as initially expected, the contrary is true, namely that teamwork skills lead to cultural awareness.
- The community engagement project has a strong influence on the development of teamwork skills, which is to be expected, as the community project was a group-driven project. Also, the community engagement project contributed strongly to the development of communication skills, and to a lesser degree to the development of cultural awareness and problem-solving skills.
- The workplace engagement project had a significant positive impact on critical thinking skills and problem-solving skills, and to a lesser degree on communication skills and self-management skills.
- The classroom engagement activities had a smaller effect than the community project and the workplace project, but it did contribute to the development of communication skills and self-management skills.

From the discussion in this paragraph, there is, therefore, conclusive evidence that the engaged learning strategy does develop generic skills.

8.2.2.5.3 The engaged learning strategy has a broader impact

Direct benefits (excluding learning) resulting from the strategy for engaged learning include direct business benefits to the community organisation and to the workplace, attitude change of participants towards community engagement, career benefits for participants, and benefits to the community. Although the timeframe of the intervention was relatively short (only six months) and no long-term effect could be established yet, a number of participants described the experience as “life-changing”.

8.2.2.5.4 Conclusions from triangulation results

Although the quantitative conclusion, provides sufficient evidence that learning did result from the strategy for engaged learning, the qualitative study served a number of benefits.

The first benefit deals with the validity and reliability of the results. Although the quantitative results were proven in chapter 6 and paragraph 7.2.1 in chapter 7 to be valid and reliable, the qualitative analysis came to the same conclusions as for the quantitative analysis, which in itself was proven to be valid and reliable. This also proved the internal validity of the study. This agreement between quantitative and qualitative results also validates this study.

The second benefit is that the quantitative results gave statistical proof of the learning that ensued, but by digging deeper into the mechanisms of the learning (subject-related and generic skills), the qualitative study enabled a deeper understanding of how this learning takes place.

The third benefit, which will be dealt with in detail in paragraph 8.4, is the notion that the qualitative results gave far more specific results than the quantitative results. By concentrating on the mechanisms revealed during the qualitative study, it could allow refining of the strategy for engaged learning for future implementation, as some of the leverage points discovered in the qualitative study could become focal points in the strategy.

8.2.3 Methodological conclusions

Although not originally intended to be part of the research design, some practical conclusions can be reached following the implementation and from the research methodology followed. Failing to mention these would reduce the value of the research, and the most important of these follow below:

8.2.3.1 Further quantitative analyses

Quantitative analysis, as the primary methodology of this mixed method study, was only used to prove that learning resulted through the strategy for engaged learning. Any other statistical analyses were beyond the scope of this study. However, the supporting qualitative analysis revealed some findings that could be further examined using statistical techniques, such as multiple regression or structural equation modelling to confirm the qualitative findings.

8.2.3.2 Time constraints

During the qualitative analysis, it became apparent that implementing the strategy for engaged learning is extremely time-consuming for participants, as typical MBA students are involved in family, workplace, social, religious and other activities in addition to their studies. The theoretical model for the engaged learning strategy predicted this as one of the most important moderating variables of the study. This has not been investigated in detail during this study, although moderators appeared as one of the factors that were extracted during the factor analysis. This constraint is even more evident in terms of time demands on the lecturer, since one of the cornerstones of engaged learning is real-time feedback. For both the workplace engagement project and community engagement project, maximum benefit would be derived from the strategy if participants could investigate the application of every single topic in both the workplace and the community organisation. However, this would place impossible demands on the time of all participants, especially during periods where students have to submit assignments for other studies. During the intervention, this was mitigated by giving students a choice to submit only a limited number of assignments, and by allowing them to decide which of the topics they would like to submit. This places a limitation on the group size for which engaged learning could be used successfully. When this study is rolled out to other subjects or other programmes, both undergraduate and post-graduate, this constraint needs to be taken into account and steps need to be taken to ensure equitable workloads.

8.2.3.3 Accuracy of pre-tests when skills development is measured

There was a substantial difference between the results of the pre-test and the retrospective pre-test when the baseline level of generic skills was measured. As proposed in par 4.3.3.3, in an intervention that is designed to develop specific skills, respondents often over-estimate their skill level before the intervention (Ebrahimi & Azmi, 2015:850). This can be mitigated by using a retrospective pre-test. During this study the pre-test of generic skills level was therefore complemented by a retrospective pre-test, and the mean value for each skill in the retrospective pre-test was indeed lower than that calculated during the pre-test. However, the development of all the generic skills was statistically significant relative to the baseline, whether the baseline was taken as the pre-test or whether the retrospective pre-test was used as a baseline.

8.3 Limitations of the study

The following limitations were identified during this study, that led to important decisions to ensure the successful outcome of the research.

- The level of lecturer involvement and real-time feedback, described in chapter 5 as part of the engaged learning strategy, depends on the size of the class and on the span of control that the lecturer can handle. In capturing the teaching design involved in engaged learning, this limitation needs to be taken into account. During this study, the study population was 141 students, which was a challenging size group to communicate with and mark assignment submissions in real time. With a different size group, especially if the group is larger, the results may well be vastly different or impractical to implement, or might be subject to changes in the practical implementation of the strategy. Smaller size groups will make implementation easier, mainly due to less logistical complications and time constraints.
- Engaged learning involves elements that might not be easy to implement in pure foundational theoretical subjects taught on the MBA level. During this study, the “laboratory” was an Operations Management course, which is a discipline that any student can relate to and which is very practical. However, the engaged learning strategy could easily be adapted for any MBA module on a strategic and functional level. Examples (and this list is not exhaustive) are Marketing Management, Information Systems Management, Strategic Management, Cost Accounting, Financial Management and Change Management.
- The ideal setting for the research would have been the inclusion of a control group to compare the learning and skills development of the experimental group. The nature of the engaged learning strategy disqualifies the use of a control group. Any measuring instrument gauging the benefits of engaged learning would specifically refer to elements of the engaged learning strategy. This rules out a control group where the engaged learning strategy is not employed, and as such, no control group was used.
- Another limitation concerns the generic skills that have been described and measured during this study. The engaged learning strategy could develop generic skills that are not mentioned in the literature, and therefore not measured in this study. This was the case with critical thinking skills, which was initially excluded from the quantitative study, but which emerged so strongly during the qualitative study that it forms part of the conclusions. Also, the attributes most developed through the strategy described in this study might not be the attributes that are most in demand in the workplace, although the literature study carried out in chapter 4 suggested that they are. The specific generic skills required of MBA students could also shift in a changing environment, and the contribution of this study could therefore increase or

decrease as these requirements change over time. These limitations are mitigated by the notion that at best only a number of selected attributes can be included in such a study, as was the case in this study, where only communication, teamwork, cultural awareness, problem-solving and self-management were included in the quantitative study and critical thinking was added during the qualitative study.

- Seen from a systems perspective, other moderating variables have an effect on the learning of students, and on the development of the selected attributes or skills. This emerged from the reflection reports that were used for the qualitative study. Students are also involved in other subject courses during the same semester, and the groups that they work in are also active in these subjects. Their exposure to these courses could have a significant influence on their learning and development, the effect of which could not be determined statistically during this study.
- Groups are sometimes geographically dispersed, which inhibits the ability for all (or some) group members to be actively involved in some learning experiences, especially group-operated service-learning community engagement projects. This could skew the benefits derived from these experiences. During the analysis, no method could distinguish this skewness. A larger sample would smooth out this effect.
- Since the students are mostly full-time employed, developments at work (such as promotion and/or transfers) and in their private lives (such as parenting) could have a noticeable moderating effect on the development of students. The measuring instrument used in this study would identify the development, but would not be able to discern the effect of such development from that ensuing from engaged learning.
- Ideally, a study of the development of specific skills should take place over a more extended period. Involvement in a six-month intervention is a very short time to gauge the success of the learning experience. The limitation is that the students were in the course where the framework is tested for a single six-month period. Should the study be stretched over an extended period by including more than one cohort of students, the number of other moderating variables could increase considerably. It was therefore decided to use only one year-group for this study.
- Similarly, part of the study revolves around a community project. To see whether the effects of any intervention at a community organisation or help to such an organisation is sustainable, might not be achievable within the time frame of this study. However, should a longer exposure to the community organisation be negotiated, the number of moderating variables would likewise increase considerably. Benefits from the workplace engagement project could likewise only be proven over a longer period.

8.4 Recommendations

The conclusions from the research, given in paragraph 8.2 were reached on two levels. Some general conclusions were reached, confirming the benefits of the strategy for engaged learning. However, some specific conclusions were reached on the deeper mechanisms of the strategy for engaged learning and some methodological conclusions were also reached. For each of these levels, various recommendations could be made.

8.4.1 General recommendations

The first few recommendations deal with the notion that the strategy for engaged learning was proved to enable deep learning of subject content and development of generic skills, and recommend ways to implement the strategy in a broader platform. The next recommendations address the areas that need to be focused on in future application of the strategy, followed by some methodological recommendations. The last recommendations deal with suggestions for future research on engaged learning.

8.4.1.1 The strategy should be expanded

With the rapid development of information and communication technology and the growth of online MBA offerings, as described in chapter 1, the need for face-to-face MBA programmes to add superior value to students is becoming a necessary requirement for survival. The strategy for engaged learning proves to add this kind of superior value on subject level. The first general recommendation follows from the first two conclusions, given in paragraphs 8.2.2.5.18.2.2.5.1 to 8.2.2.5.3. It was proven that the strategy indeed results in learning and application of both subject content and generic skills and that it has a broader impact, and it can therefore strongly be recommended that the strategy for engaged learning works for MBA students, and therefore it should be adapted for and expanded to other subjects within the MBA curriculum. The applicability of the strategy for subjects with a strong practical content would be relatively simple.

8.4.1.2 Implement the strategy step by step

The strategy for engaged learning has evolved over a few years and is a novel combination of known methods. When implementing the strategy, it should be done step-wise, with elements of the strategy that would deliver the largest benefit with the least effort being implemented first.

8.4.1.3 Adapt the strategy for other part-time programmes

The strategy for engaged learning was developed during and tested in an MBA programme, where participants are full-time employed workers who study part-time in a discipline that they wish to apply in their workplace. These parameters apply equally to part-time students in education (practising teachers), accounting (practising accountants), theology (practising pastors) and many other disciplines. In some disciplines, such as physicians busy specialising, some of the elements of the engaged learning strategy are already being used. It is strongly recommended that universities investigate the applicability of the engaged learning strategy to other part-time courses.

8.4.1.4 Investigate the application of engaged learning in undergraduate programmes

The environment for application of the strategy in an MBA programme is conducive to engaged learning, since participants are working adults. Also, with MBA students come some complicating moderating factors, such as a very busy schedule, juggling family, work and studies and logistical challenges. On undergraduate level some of the advantages of MBA students become challenges, and some of the challenges could become benefits (such as students having more time on their hands, but no work environment to apply the knowledge). Adapting the strategy for engaged learning to undergraduate programmes would provide some challenges, but the need for good teaching, development of generic skills and relevance makes it necessary to implement elements of engaged learning on an undergraduate level. Implementing the strategy in different disciplines will provide unique challenges, but elements of the strategy can (and should) be implemented in undergraduate courses relatively easily.

8.4.1.5 The inclusion of a community engagement component in more courses

In the introduction in chapter 1, the changes in the environment that impact tertiary education in the 21st century were briefly touched on. These changes impact organisations beyond universities, as can be seen in the increasing demand for triple-bottom-line reporting and where organisations across the spectrum accept responsibility for the communities where they operate. Especially in developing countries such as South Africa, the need for caring for the community is dire. The learning methodology of service-learning is gaining ground fast, but is noticeably rare in business education, especially on MBA level. It is strongly recommended that business schools embrace the community engagement element of engaged learning to develop students, but more importantly, to make a difference.

8.4.1.6 The applicability of the engaged learning strategy for distance learning programmes

Quantitative analysis results, given in chapter 7, show that the effect of classroom engagement activities on learning is less substantial than the effect of the community engagement project and the workplace engagement project. This warrants an investigation of whether engaged learning can be implemented in distance learning programmes. Adapting engaged learning projects, especially the community project to address the constraints involved in distance learning (such as study groups being far apart, which would make physical involvement with community organisations challenging), could be a valuable exercise. It is strongly recommended that engaged learning is piloted in a distance MBA programme.

8.4.1.7 The relationship between different generic skills

That there are correlational relationships between the different skills, has been established quantitatively and that these relationships are in some cases causal in nature, has been established during the qualitative study. Some of these relationships are stronger than others, which was to be expected. However, some of the weaker relationships could not be explained from the data, and further quantitative or qualitative analyses would be necessary to shed light on the nature of the interdependence between the different skills that developed during engaged learning.

8.4.1.8 Focus on the leverage points that emerged from the study

The study revealed some leverage points during the qualitative study, such as the notion that communication skills are critical to most generic skills and that the vital communication skill is the skill to ask the correct questions. It is recommended that these leverage points should be the focus during future implementations of the engaged learning strategy. Other leverage points that emerged are the need for governance in teams, the importance of analytical thinking and time management skills and problem-solving methodology.

8.4.2 Methodological recommendations

8.4.2.1 When measuring skills development, triangulate pre-tests with retrospective pre-tests

One of the triangulations that was used during this study was not to trust the result of a pre-test, but to supplement the pre-test with a retrospective pre-test when the baseline value for generic

skills was established. These two tests gave significantly different results, as were reported in chapter 7, paragraphs 7.3.1 to 7.3.6. Although the literature suggests that the retrospective pre-value would be the more accurate value to use (Ebrahimi & Azmi, 2015:850), it still has to be investigated which of the two values is the correct one. Although evidence exists that participants in skills development interventions usually overestimate their ability in a pre-test before being introduced to the intervention (i.e. they don't know what they don't know), it is equally possible that participants might underestimate their initial skill level during a retrospective pre-test due to the Hawthorne effect (i.e. they know that their skills were supposed to develop, so they rate their initial skills lower than they should). Some questions need answers: Which is the most accurate value? If both are inaccurate, is there a calculation that would yield accurate results? Does this apply to MBA students to the same extent as to undergraduate students or workers who do not study? Could a triangulating measure be designed? Further research on this issue is required.

8.4.2.2 The effect of the flipped classroom

Although the qualitative results have shown the effectiveness of the flipped classroom as an enabling mechanism, research needs to be done to verify the direct and indirect effects of the flipped classroom, specifically when employed as part of the engaged learning strategy.

8.4.3 Recommendations for future research

Although a number of issues that warrant further investigation have been discussed above, a few pointers for future research on engaged learning are given:

8.4.3.1 Sample size

Although the quantitative study yielded significant results, the sample size was too small to do more advanced statistical analyses that could provide more insight into causal relationships between constructs included in the strategy for engaged learning. Repeating the study with another cohort of students exposed to the strategy could supply valuable data enabling more advanced data analysis. Another benefit of a larger sample relates to validity: Validity was established using a principal component factor analysis, which gave satisfactory (albeit not great) results in determining convergent and divergent validity. Ideally, this should be carried out using structural equation modelling, which requires a larger sample. A larger sample would enable this to be done.

8.4.3.2 Advanced quantitative analyses

Related to the previous recommendation, it is recommended to do some advanced statistical analyses on the constructs. Examples are multiple regression or structural equation modelling to establish causal relationships between the three independent variables (community engagement, workplace engagement and classroom engagement), moderating variables, benefits and the dependent variables (subject learning and the different generic skills). Valuable conclusions could be drawn from such analyses.

8.4.3.3 Measure the success of expansion of engaged learning to other groups

It has already been recommended that the strategy be rolled out to other MBA subjects, to other part-time disciplines and undergraduate courses and to consider the introduction of community engagement on a wider front. It is recommended that such implementation is not just carried out, but that the success be measured quantitatively and compared to the results of this study.

8.5 The contribution of the study

Assessing the contribution of the study is difficult, especially as the primary participant (lecturer) is also the primary researcher. However, comparing the results with the expected contribution, given in chapter 1, paragraph 1.7, the following conclusions can be drawn regarding the theoretical and practical contribution of the study.

8.5.1 Theoretical contribution

- Any study that adds to the body of knowledge on teaching techniques that lead to better learning of subject content makes a positive contribution. With the rapid advances in communication and information technologies in the 21st century, the nature of learning is changing daily. Lecturers that are presenting monologues in front of a class are still in over-supply (Caza & Brower, 2015:108; Desai *et al.*, 2016:73; Hühn, 2014:538), but are fast becoming obsolete, as information is increasingly available to all students at the press of a button on their computer or mobile phone. One student wrote: *"I like it! Much more interaction. My idea of MBA: We must learn from each other – have conversations, etc... not just one directional communication."* The overall conclusions included that the engaged learning strategy enables superior learning of subject content. This constitutes a valuable theoretical contribution.

- The concept of graduate attributes (or generic skills, the term used in this study) is a fast-growing area of interest in tertiary education. Many universities have in their strategies a “statement of graduate attributes”, a document that is meant to guide teaching to reach beyond imparting of mere subject knowledge. Ways of developing students’ generic skills, or graduate attributes, is a very relevant study field. The engaged learning strategy was designed to develop generic skills, and the results of the study have shown that generic skills did develop measurably.
- During the qualitative analysis, some mechanisms were identified for how learning takes place, for development of specific generic skills, for the effect of the different engaged learning elements and for the causal relationship between the different generic skills that developed during the intervention. Each of these mechanisms makes a valuable theoretical contribution to the body of knowledge.
- Community engagement projects, as described in the literature on service-learning, is a field that is very under-research in the field of business and management, especially on MBA level (Bennett *et al.*, 2016:161). This study helps to fill that void.
 - Engaged learning, as defined in this study and proven through this research, is a novel combination of known andragogic concepts in an MBA context. This study describes a valuable blend of these concepts that add to the body of knowledge on andragogy.
 - Learning on the MBA level is a relatively under-researched field, especially in developing countries such as South Africa, where this study was carried out. Any research that could improve learning would make a valuable theoretical and practical contribution to the body of knowledge. This study certainly did that.
 - The body of scientific knowledge about ways of enhancing and assessing generic skills among MBA students is limited (Andrews, 2015). More specifically, there is scant evidence of the effect of community projects on the development of students in the business and management discipline, especially on MBA level (Bennett *et al.*, 2016:161). The other significant contribution of this study is to assist in filling this void.

8.5.2 Practical contribution

The practical contribution of the study emerges from the general conclusions that the strategy for engaged learning enables deep learning, develop specific generic skills and has an impact on various stakeholders through a community engagement project, a workplace engagement project and some classroom engagement activities.

- One of the elements of engaged learning is a community engagement project, described in the literature as “service-learning”, which on MBA level is an under-utilised and under-researched practice. The increasing need for community engagement, especially in developing countries, underlines the need for a well-documented practice that benefits students and the broader community. This study has provided precisely that: a well-documented blueprint for how community engagement projects could be carried out on the MBA level.
- Later expansion of the application of the engaged learning methodology to other disciplines and undergraduate students has been mentioned in the recommendations and follows from the conclusion that the methodology results in learning. This further adds to the contribution of the study.
- On an institutional level, the most significant contribution concerns the relevance of face-to-face contact mode (i.e. blended learning) at business schools in the Internet age. Should universities that utilise blended learning in their offering not provide significantly more value than online content, those universities will lose students (Burga *et al.*, 2017:316). If business schools offering face-to-face classes want to stay relevant, they should rethink their value proposition and the accompanying teaching methods, as outdated lecturing styles might no longer be tolerated by students (Örtenblad *et al.*, 2013:91).
- Engaged workers are better performers (Reijseger *et al.*, 2017:129). The effect of engaged learning could hold major benefits to students’ place of work, should their engaged behaviour manage to transfer to the workplace.
- Some of the benefits that were reported in chapter 7 were real management benefits to both the workplaces and the community organisations where projects were conducted during this study. The management impact of the strategy on such organisations, as well as the benefits accruing to students, such as a changed attitude towards community work, career benefits and action orientation, make a major practical contribution to these organisations.
- The biggest practical contribution is described by one participant, who wrote: “This is the best module that I have ever attended to date. I leave as a better human.”

8.6 Chapter conclusion

During this study, learning was studied, engagement was investigated, the objective of learning on a wider scale (generic skills) was researched and from these, a strategy for engaged learning

was proposed. This study was implemented over a six-month period, and the success of the strategy was measured in terms of learning, development of generic skills and broader impact. In this chapter, conclusions were drawn, basically stating that the strategy for engaged learning works, it enables learning and development of generic skills, and it has a broader impact. Recommendations were made and the contribution of the study was highlighted. In conclusion, the results of the study strongly suggest that engaged learning deals with a vital factor that needs to be considered if face-to-face MBA programmes still want to be relevant in the 21st century. To quote Benjamin Franklin:

***“Tell me, and I forget;
teach me, and I may remember;
involve me, and I learn!”***

8.7 Chapter summary

In this final chapter the research objectives were perused and compared with the findings, and all the objectives have been met. Conclusions were drawn, the most important one being that the strategy for engaged learning does result in learning, but also in terms of the mechanisms through which this happens. Some methodological conclusions have also been reached. From the conclusions, a number of recommendations are proposed, and the contribution of the study has been confirmed.

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Attachment 1. List of generic skills mentioned in 2017 and their frequency (f)

From whose perception was the study undertaken?		Business	Business	Business	Faculty	Government	Students	Business	Business	Accountants	Graduates	Business	Business vs MBAs	Students vs lecturers
Source		Hurst (2018)	Galbraith (2017)	Ronnie (2017)	Osmani (2017)	Jonck (2017)	Jones (2015)	Truong (2017)	Beenen (2017)	Gardner (2017)	Metilda (2017)	Chen (2017)	Jones (2017)	Paterson (2017)
Skill mentioned	f													
Teamwork	11	X			X	X	X	X	X	X	X	X	X	X
Communication	10	X			X	X	X	X	X	X	X		X	X
Critical thinking	8	X			X		X	X	X	X			X	X
Problem solving	7	X			X	X		X	X	X	X			
Leadership	6	X					X	X	X	X			X	
Cultural awareness	6		X					X	X	X	X	X		
Technological/computer	5					X	X	X			X		X	
Professionalism/ appear	5	X					X	X	X				X	
Writing	4						X		X	X			X	
Time management	4	X			X						X			X
Self-management	4	X				X		X						X
Negotiation	4							X	X	X	X			
Initiative	4						X	X			X		X	
Work ethic	3	X				X	X							
Trustworthy	3						X		X				X	
Transfer of knowledge	3	X							X					X
Respect	3						X		X				X	
Research	3				X	X				X				
Quantitative	3						X	X					X	
Presentation/speaking	3								X	X				X
Motivation/motivating	3							X	X			X		
Interpersonal	3					X		X		X				
Ethical judgement	3	X							X		X			
Decision-making	3							X	X		X			
Creativity	3				X			X	X					
Coordination	3	X		X						X				
Confidence	3						X		X				X	

Attitude	3						X		X				X	
Assertive	3								X			X		X
Adaptive capacity	3	X						X						X
Subject specialist	3					X	X	X						
Work experience	2						X						X	
Technical knowledge	2	X											X	
Social intelligence	2								X	X				
Sense of humour	2								X				X	
Self-awareness	2								X	X				
Organised	2						X					X		
Networking	2								X			X		
Judgement	2								X	X				
Intuition	2								X			X		
Goalsetting	2	X							X					
Flexibility	2								X					X
Empathy	2								X	X				
Delegation	2	X										X		
Conflict resolution	2	X							X					
Collaboration	2			X						X				
Analytical	2								X	X				
Ambition	2						X						X	
Accountability	2								X		X			
Acceptance of diversity	2	X	X											
Ability to see big picture	2	X				X								
Values	1								X					
Take responsibility	1						X							
Strong personality	1						X							
Stress management	1								X					
Strategic management	1								X					
Shrewdness	1											X		
Risk-taking	1							X						
Responsibility	1												X	
Resource management	1	X												
Receiving feedback	1								X					
Providing vision	1								X					
Providing goals	1								X					
Project management	1								X					
Professional dev	1								X					
Prioritising	1										X			
Political skills	1								X					
Physical attractiveness	1											X		
People skills	1								X					
Organisational skills	1								X					
Open-minded	1								X					

Numeracy	1							X						
Multilingual	1							X						
Maturity	1								X					
Managerial skills	1									X				
Learning orientation	1							X						
Job-seeking	1					X								
Issue selling	1								X					
Interviewing	1								X					
Influencing	1								X					
Humour	1						X							
Honesty	1								X					
Giving feedback	1								X					
Excellence	1							X						
Etiquette	1								X					
Environmental	1					X								
Emotional intelligence	1								X					
Discretion	1						X							
Discipline	1							X						
Diplomacy	1								X					
Determination	1								X					
Curiosity	1							X						
Courage	1						X							
Corporate knowledge	1						X							
Cooperation	1									X				
Compassion	1						X							
Community orientation	1							X						
Commercial awareness	1										X			
Coaching and mentoring	1								X					
Career management	1					X								
Capitalise on change	1											X		
Budgeting	1	X												
Approachable	1								X					
Applying knowledge	1								X					
Amiability	1							X						
Adapt theory to practice	1											X		
Service orientation	1								X					
Relationship building	1								X					
Coaching	1								X					

Attachment 2. Existing instruments used for compiling quantitative questionnaire

Name of instrument: Communication Skills Questionnaire (CSQ)

- **Skill measured:** Communication skills
- **Scale:** 5-point Likert scale: 1-poor, 2-fairly, 3-sometimes good, 4- almost always good, 5- always good
- **Validity and reliability:** Valid and reliable: 3 Factors extracted. Cronbach's alpha values for all three factors were are above 0.91. Test-retest reliability are between 0.90 and 0.95. Inter-rater reliability is 0.73. Tested for concurrent, discriminant and convergent validity and all three proved valid.
- **Source:** (2006:217)

Name of instrument: Communication skills measurement

- **Skill measured:** Communication skills
- **Scale:** Descriptive statistics were used to trace frequency of use of the items.
- **Validity and reliability:** Accurate in predicting performance
- **Source:** Rasipuram and Jayagopi (2016:376)

Name of instrument: Teamwork skill questionnaire

- **Skill measured:** Teamwork
- **Scale:** 5-point Likert scale: Very frequently, frequently, sometimes, rarely, never
- **Validity and reliability:** Only tested in exploratory study. Validity and reliability could not be established yet.
- **Source:** Brock *et al.* (2017:127)

Name of instrument: Not supplied

- **Skill measured:** Teamwork
- **Scale:** 0 - 4 Evaluation Scale, 0 – Never, 1- Rarely, 2- Occasionally, 3- Frequently, 4- Always
- **Validity and reliability:** Content validity established, no other validity or reliability tests carried out. Tested on MBA students

- **Source:** Hobson *et al.* (2014:200)

Name of instrument: Maternal and Child Health Public Health Institute (MCH PHLI) internal instrument

- **Skill measured:** Leadership
- **Scale:** 5-point Likert scale: 1-unskilled, 2-low skills, 3- moderately skilled, 4-good skills, 5-highly skilled.
- **Validity and reliability:** Paired t-test used (significance level $\alpha < 0.01$). Not tested for statistical validity and reliability, but retrospective pre/post-test was used because for skill testing, because students usually over-estimate their ability in a pre-test before being exposed to the skills. Tested on healthcare professionals.
- **Source:** Fernandez *et al.* (2015:350)

Name of instrument: Not supplied

- **Skill tested:** Leadership
- **Scale:** Not supplied, but the structure of the questions suggests a Likert scale.
- **Validity and reliability:** Valid and reliable: Validated using Structural Equation Modelling. For all the factors, Cronbach's alpha ranging between 0.77 and 0.87. This instrument measures the subscales of leadership, which include other graduate attributes.
- **Source:** Mehrabani and Mohamad (2015:852)

Name of instrument: Personal problem-solving inventory

- **Skill measured:** Problem-solving
- **Scale:** 6-point Likert scale
- **Validity and reliability:** Valid and reliable: The test was designed for face validity with the following conditions: Unrelated to social desirability and intelligence, amenable to change when subjected to problem-solving training, unrelated to conceptualising means to solving a hypothetical problem situation, and related to personal variables, especially internal locus of control. In four samples of undergraduate students, all these assumptions were confirmed. Three factors emerged from the factor analysis. The test was not correlated with intelligence tests. Cronbach's alpha values for the different factors ranged between 0.85 and 0.88.
- **Source:** Heppner and Petersen (1982:70)

Name of instrument: OPTION behaviours

- **Skill measured:** Decision-making
- **Scale:** 5-point scale: 0-There is no attempt to perform the behaviour, 1-There is a perfunctory or unclear attempt to perform the behaviour, 2-The behaviour is performed at baseline skill level, 3-The behaviour is performed to a good standard, 4-The behaviour is performed to a high standard
- **Validity and reliability:** Not mentioned.
- **Source:** Couët *et al.* (2015:561)

Name of instrument: Decision-making assessment tool

- **Skill measured:** Decision-making
- **Scale:** 5-point Likert scale, ranging from 1-never to 5-always.
- **Validity and reliability:** Valid and reliable: Tested on 58 young adults, the factor analysis yielded five sub-scales, each with a Cronbach's alpha value of above 0.62.
- **Source:** Olson *et al.* (2017:84)

Name of instrument: SDM-Q9

- **Skill measured:** Decision-making
- **Scale:** 5-point scale: 0-There is no attempt to perform the behaviour, 1-There is a perfunctory or unclear attempt to perform the behaviour, 2-The behaviour is performed at baseline skill level, 3-The behaviour is performed to a good standard, 4-The behaviour is performed to a high standard
- **Validity and reliability:** Valid and reliable: Factorial validity has been established. Cronbach's alpha values above 0.7 for all 0.94.
- **Source:** Scholl *et al.* (2015:150)

Name of instrument: Removal decisions questionnaire

- **Skill measured:** Decision-making
- **Scale:** 7-point Likert scale: 1-strongly disagree to 7-strongly agree
- **Validity and reliability:** Valid and reliable: Validated through principal component analysis. Cronbach's alpha value for this scale is 0.661.
- **Source:** Dettlaff *et al.* (2015:28)

Name of instrument: NOTECHS assessment of pilot skills

- **Skill measured:** Decision-making
- **Scale:** 5-point Likert scale: 1-very good, 2-good, 3-acceptable, 4-poor, 5-very poor
- **Validity and reliability:** Information not available: Investigated by qualitative measures: The sample was too small to establish statistical validity or reliability.
- **Source:** Flin *et al.* (2017:116)

Name of instrument: Self-control and self-management skills (SCMS)

- **Skill measured:** Self-management skills
- **Scale:** 6-point Likert scale: 1-Very-low to 6 – Very high
- **Validity and reliability:** Valid and reliable: A factor analysis extracted 3 factors, of which the Cronbach alpha values ranged from 0.85-0.92.
- **Source:** Al-Smadi and Bani-Abduh (2017:459)

Name of instrument: Grit-S

- **Skill measured:** Self-management skill (Grit)
- **Scale:** 4-point Likert scale
- **Validity and reliability:** Validated through confirmatory factor analysis. Reliable, because the lowest Cronbach alpha value achieved in any of the test was 0.73.
- **Source:** Datu *et al.* (2016:129)

Name of instrument: Executive Skills Questionnaire

- **Skill measured:** General self-management skills
- **Scale:** 7-point Likert scale, ranging from 1 – Strongly agree to 7 – strongly disagree
- **Validity and reliability:** Validated by Willis *et al.* (2014:182). Moderate reliability, with Cronbach's alpha values for the three factors extracted ranging from 0.559 to 0.614.
- **Source:** Dawson and Guare (2018:169)

Skill measured: Critical thinking skills

- **Name of instrument:** Critical Thinking Attribute Survey (CTAS)
- **Scale:** Tick sheet: Frequencies were monitored
- **Validity and reliability:** Cronbach's alpha value was 0.73.
- **Source:**(Forawi, 2016:60)

Name of instrument: Cultural Intelligence Scale (CQS)

- **Skill measured:** Cultural intelligence
- **Scale:** 7 Point Likert scale: (1-strongly disagree; 7-strongly agree)
- **Validity and reliability:** Valid and reliable: Subjected to exploratory factor analysis showing internal consistency. All factors' alpha values were above 0.7 (ranging from 0.72 to 0.86)
- **Source:** Ang *et al.* (2007:370)

Name of instrument: Cultural Awareness Scale (MAS)

- **Skill measured:** Cultural Awareness
- **Scale:** 5-point Likert scale: 1-strongly agree, 2-agree, 3-uncertain, 4-disagree, 5-strongly disagree
- **Validity and reliability:** Valid and reliable: Factor analysis yielded one item that did not contribute to validity and that was removed, yielding the above list. Cronbach's alpha values for both factors were above 0.7.
- **Source:** Awang-Shuib *et al.* (2017:50)

Name of instrument: Cultural Awareness Scale

- **Skill measured** Cultural Awareness
- **Scale:** 4-point Likert scale: 1-strongly disagree, 2-disagree, 3-agree, 4-strongly agree
- **Validity and reliability:** Valid and reliable: Factor analysis extracted four factors: Cultural skills, cultural knowledge, cultural appreciation and cultural awareness. For all four factors, Cronbach's alpha values were above 0.75.
- **Source:** Malone *et al.* (2016:237)

Name of instrument: Course Experience Questionnaire

- **Skill measured:** All graduate attributes
- **Scale:** 5-point Likert scale: 1-definitely disagree to 5-definitely agree, (those printed in italics are scored in the opposite direction)
- **Validity and reliability:** Valid and reliable: Exploratory and confirmatory factor analysis (7370 respondents) yielded the factors mentioned in the scoring system, the lowest Cronbach's alpha coefficient being 0.72 (0.77 for Generic Skills).
- **Source:** Wilson *et al.* (1997:40)

Name of instrument: Evaluation in Higher Education: Self-Assessed Competencies HEsaCom

- **Skill measured:** All graduate attributes
- **Scale:** 5-point Likert scale
- **Validity and reliability:** Valid and reliable: Confirmatory factor analysis yielded six factors: Knowledge processing, systematic competence, presentational competence, communication competence, cooperation competence, and personal competence. Cronbach's alpha values are all above 0.83.
- **Source:** Braun and Leidner (2009:305)

Name of instrument: BEvaKomp

- **Skill measured:** All graduate attributes
- **Scale:** 6-point Likert scale: 1-Applies fully to 6-Applies not at all, including space for "Existed before the course"
- **Validity and reliability:** Valid and reliable: Four factors extracted, using principal component analysis: Personal competence, Reflection competence, Professional competence and Relational competence. All Cronbach's alpha values were above 0.866.
- **Source:** (Nagel *et al.*, 2017:20)

Name of instrument: Graduate Skills and Attributes Scale (GSAS)

- **Skill measured:** All graduate attributes
- **Scale:** 6-point Likert scale, ranging from 1-strongly disagree to 6 strongly agree.
- **Validity and reliability:** Valid and reliable: First validated through content analysis. Afterwards a factor analysis yielded eight factors. Developed in South Africa, tested on large samples of management students, including MBA students.
- **Source:** Coetzee (2014b:900)

Name of instrument: General Graduate Attribute Test

- **Skill measured:** General attributes
- **Scale:** Group exercise, graded by a rubric. Different for each test: For Likert-type questions, a 4-point scale was used, other skills were assessed on a 4-point scale using a rubric.
- **Validity and reliability:** Valid and reliable: Validated on undergraduate students through an exploratory factor analysis. Reliability established using Cronbach's alpha coefficient.

- **Source:** (Geel, 2015:89)

Attachment 3. Final questionnaire for quantitative data collection

PhD research project: J A Jordaan

A strategy for engaged learning in an MBA programme.

Dear Student,

Unique code	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

As you have experienced, the teaching approach this semester was slightly different than what you are probably used to. Many of the techniques used in class were initially suggested by students through similar questionnaires, and therefore I would like you to complete this questionnaire to gauge the benefits you derived from this module. This questionnaire is intended to measure whether the teaching approach that was followed this semester actually led to better learning, not just learning of subject principles, but also learning of generic skills, such as self-management, teamwork, problem-solving, communication and cultural awareness.

*At the top of the page is a **unique code** that you have to compile for yourself. This is the same unique code that you have added to each of your reflective logs that you have submitted after each contact session. The code consists of the first and last letter of the town where you were born, the first and last letter of your mother's maiden name and the first and last letters of your father's first name. This code is simply used to match your response in this questionnaire with the reflective logs that you have submitted through the year, and it is not traceable to your name. Participation is totally **voluntary**, and you could withdraw at any time before the analyses are conducted. By completing this questionnaire, you give **permission** that the data could be used for research purposes. This questionnaire is totally **anonymous**: Apart from the secret code that you give at the top of this page, there is no identification.*

Should you not feel comfortable to share your experience with your lecturer in my capacity as the researcher, you are free not to participate. You are guaranteed that your participation or withdrawal from the study will have no effect on your MBA studies. If completing the questionnaire makes you feel uncomfortable at any time, you are welcome to skip the question that bothers you or to phone me or one of the following people, who will look into the source of your discomfort:

Prof Alfred Henrico (Research promotor, 018 299 1463), Prof Stephan van der Merwe (Scientific committee, 018 299 1414) or Ms Erna Greyling, EduREC 018 299 4656).

Attached is an INFORMED CONSENT FORM that you must please sign, where you give consent for me to use the information for research purposes.

The questionnaire consists of three parts. PART A measures your experience of the approach followed during the semester, PART B measures the subject-related learning that took place and PART C measures the development of generic skills that took place. Part D is a skills measuring exercise that you will carry out in class with your study group.

For all statements where the scale is 1 to 5, the rating scale is: 1 = Fully disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Fully agree. Simply tick the appropriate box relating to your response.

PART A contains questions on your experience of the method used during the semester.

PART A: Your experience of the teaching method		1 = Fully disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Fully agree
1. The flipped classroom approach (Preparing theory at home, contact session for other learning activities)						
1.1	I prefer the “flipped” approach to normal lecturing.	1	2	3	4	5
1.2	I prefer normal lecturing to the flipped approach.	1	2	3	4	5
1.3	Going through the slides on eFundi is making good use of my time.	1	2	3	4	5
1.4	The approach made it unnecessary to attend classes.	1	2	3	4	5
1.5	Classes added additional value to the slides studies at home.	1	2	3	4	5
1.6	The voice commentary added value to the slide shows that I went through at home.	1	2	3	4	5
1.7	The textbook added value to the narrated slides that I went through at home	1	2	3	4	5
1.8	The textbook slides added additional value to the narrated slides that I went through at home	1	2	3	4	5

1.9	Going through the slides before the lesson was a good use of my time.	1	2	3	4	5
1.10	Going through the slides before the lesson took too much of my time.	1	2	3	4	5
1.11	Proper preparation for this module made classes meaningful.	1	2	3	4	5
1.12	The templates and checklists supplied for the pre-assignments added value.	1	2	3	4	5
1.13	The templates and checklists supplied underestimated my intelligence.	1	2	3	4	5
1.14	I would like it if more subjects could be taught this way.	1	2	3	4	5
1.15	The flipped approach enabled real contribution in class.	1	2	3	4	5

For sections 2 and 3, the first three questions of each section are yes/no questions. Just mark the appropriate block. The same applies to question 7.1. The other questions require that you assign a number, ranging from 1 (Fully disagree) to 5 (Fully agree).

2. Community project (group assignment)						
2.1	I was physically involved in the community project.				Y	N
2.2	I was the primary contact between the group and the community organisation.				Y	N
2.3	I spent too much time focusing on issues unrelated to operations management during the community project.				Y	N
2.4	I came up with some plans for the community organisation.	1	2	3	4	5
2.5	I was responsible for the group assignment reports.	1	2	3	4	5
2.6	I helped analyse the different issues at the community organisation.	1	2	3	4	5
2.7	I took part in study group discussions on the community project.	1	2	3	4	5
2.8	The community project should be extended to other modules / subjects.	1	2	3	4	5
2.9	I spent a fair amount of time at the community organisation	1	2	3	4	5
2.10	I helped the community organisation with getting resources they need.	1	2	3	4	5
2.11	We tackled all the topics taught in the semester at the community organisation.	1	2	3	4	5
2.12	I got my "hands dirty" at the community organisation.	1	2	3	4	5
2.13	The community project is a waste of valuable time.	1	2	3	4	5
2.14	There was enough time to make a real difference at the community organisation.	1	2	3	4	5
2.15	The advantages of the community project outweigh the disadvantages.	1	2	3	4	5
2.16	The community project is just a duplication of the individual project	1	2	3	4	5
2.17	The community project distracted me from spending time with my family.	1	2	3	4	5
2.18	Logistical issues (distances, etc.) make the community project not sensible.	1	2	3	4	5
2.19	The community project is good for my family relationships.	1	2	3	4	5
2.20	The playing field is uneven, because not all the community organisations and community projects are equally complex.	1	2	3	4	5
2.21	My job suffered because of the community project.	1	2	3	4	5
2.22	Building relationships with the community is important to me.	1	2	3	4	5
2.23	I like applying my knowledge in the community.	1	2	3	4	5
2.24	The community project was fun.	1	2	3	4	5
2.25	The community project was a touching experience.	1	2	3	4	5

2.26	This module made a real difference to the community organisation	1	2	3	4	5
2.27	The difference we made to the community organisation will be sustainable	1	2	3	4	5
2.28	The community project made a real difference to me.	1	2	3	4	5
2.29	I have built valuable relationships with the community organisation	1	2	3	4	5
2.30	My involvement with community organisations will continue beyond this semester	1	2	3	4	5
2.31	We transferred some real skills to the community organisation	1	2	3	4	5
2.32	I have cultivated a social conscience through the community project	1	2	3	4	5
2.33	The community project made me a better manager.	1	2	3	4	5
2.34	I like the opportunity to apply my knowledge in the community.	1	2	3	4	5
2.35	Building relationships with the community is important to me.	1	2	3	4	5
2.36	I am looking for other opportunities to apply my skills in the community.	1	2	3	4	5
2.37	The community project positively affected my family.	1	2	3	4	5
2.38	All managers should get involved in community work.	1	2	3	4	5

3. Individual project						
3.1	I did my individual project in my own workplace.					Y N
3.2	The project should be extended to other modules (1=n/5=y)					Y N
3.3	The individual project has already opened up career opportunities for me.					Y N
3.4	I had to ask for information from other people at work for the individual project.	1	2	3	4	5
3.5	I needed to study work-related documents to be able to do the individual project.	1	2	3	4	5
3.6	I had to challenge the organisation to such a point that I felt uncomfortable.	1	2	3	4	5
3.7	I had to speak to higher level management to get information for the individual project.	1	2	3	4	5
3.8	I made friends in the organisation due to my involvement in the individual project.	1	2	3	4	5
3.9	I made enemies in the organisation due to my involvement in the individual project.	1	2	3	4	5
3.10	I crossed boundaries within the organisation during the individual project, more than before the project.	1	2	3	4	5
3.11	I needed help from some of my colleagues for the individual project.	1	2	3	4	5

3.12	The questions I asked during the individual project were coming directly from the theory we have learnt in this subject.	1	2	3	4	5
3.13	I came up with novel solutions to issues during the individual project.	1	2	3	4	5
3.14	The learning-to-time benefit ratio of the individual project makes it worthwhile.	1	2	3	4	5
3.15	The individual project makes self-study meaningful.	1	2	3	4	5
3.16	The project made a positive difference to my understanding of my company.	1	2	3	4	5
3.17	The project made me a more valuable employee.	1	2	3	4	5
3.18	The project made me a better manager.	1	2	3	4	5
3.19	My relationship with the company is better as a result of the project.	1	2	3	4	5
3.20	I have built relationships with other students through the project.	1	2	3	4	5
3.21	I have built relationships with other employees through the project.	1	2	3	4	5
3.22	There was enough time to do the project well.	1	2	3	4	5
3.23	The project gives me the opportunity to share my experience.	1	2	3	4	5
3.24	The project was valuable use of my time.	1	2	3	4	5
3.25	The advantages of the project outweighs the disadvantages.	1	2	3	4	5
3.26	In terms of organisational politics, the individual project had a positive effect on my career.	1	2	3	4	5
3.27	The project negatively affected some of my relationships with people in my organisation.	1	2	3	4	5
3.28	I simply wrote down solutions proposed by others during the individual projects.	1	2	3	4	5
3.29	I physically helped implement some of the suggestions I have made.	1	2	3	4	5

4. Classroom engagement						
4.1	The discussions in industry groups were valuable.	1	2	3	4	5
4.2	I preferred the discussions in diverse groups to those in industry groups.	1	2	3	4	5
4.3	I got involved in the games and simulations (whether I was one of the people doing it in front of the class or not).	1	2	3	4	5
4.4	The dedication and prayer at the beginning of the lesson is a good thing.	1	2	3	4	5
4.5	I shared my views in classroom discussions.	1	2	3	4	5
4.6	A theoretical lecture would have more benefits than the classroom activities we have done.	1	2	3	4	5

4.7	Classroom simulations and games are a waste of time.	1	2	3	4	5
4.8	Videos are good tools to show the theoretical principles.	1	2	3	4	5
4.9	I like to listen to other students sharing their experience in class.	1	2	3	4	5
4.10	I can relate to the examples used in class.	1	2	3	4	5
4.11	The lecturer has made me a more ethical leader.	1	2	3	4	5
4.12	Other study groups sharing their community projects is valuable to me.	1	2	3	4	5
4.13	Making up songs or rhymes has practical value to students.	1	2	3	4	5
4.14	Classes must be fun.	1	2	3	4	5
4.15	I received value from the lecturer answering questions posed by the students in their assignment submissions.	1	2	3	4	5
4.16	Audio feedback is better than written feedback.	1	2	3	4	5
4.17	Time in class was used well.	1	2	3	4	5
4.18	Lessons were boring.	1	2	3	4	5
4.19	The level of teaching is correct for me.	1	2	3	4	5
4.20	The lecturer has used the eFundi platform effectively.	1	2	3	4	5
4.21	The lecturer has provided clear explanations of important issues/principles.	1	2	3	4	5
4.22	The lecturer has encouraged students to express their ideas, thoughts and feelings.	1	2	3	4	5
4.23	The lecturer has invited students to share their knowledge and experiences.	1	2	3	4	5

5. Assessment						
5.1	The continuous assessment of the individual project is a fair estimation of my knowledge.	1	2	3	4	5
5.2	Submitting short assignments (theory summary) between long ones (theory, analysis and proposals) is a fair assessment of my knowledge.	1	2	3	4	5
5.3	The time spent on the final individual portfolio is too much, relative to preparing for the examination.	1	2	3	4	5
5.4	I would like it to submit similar individual portfolios in other subjects.	1	2	3	4	5
5.5	The assessment guidelines were clear.	1	2	3	4	5
5.6	The final individual portfolio of evidence made me a better employee.	1	2	3	4	5

5.7	The <u>peer assessment</u> of the group presentations gives a fair idea of the achievement of study groups.	1	2	3	4	5
5.8	The <u>portfolio assessment</u> of the group projects gives a fair idea of the achievement of study groups.	1	2	3	4	5
5.9	Voice feedback really told me how well I have learnt.	1	2	3	4	5
5.10	The assessment schedule is too harsh.	1	2	3	4	5
5.11	I prefer the final individual portfolio of evidence to an examination.	1	2	3	4	5
5.12	The final individual portfolio of evidence is an accurate way to gauge my personal knowledge.	1	2	3	4	5
5.13	The individual portfolio of evidence should be extended to other subjects.	1	2	3	4	5

6.	Technology	1	2	3	4	5
6.1	eFundi added value to the course.	1	2	3	4	5
6.2	eFundi frustrated me.	1	2	3	4	5
6.3	eFundi is a good vehicle to submit assignments.	1	2	3	4	5
6.4	eFundi is a good vehicle to get feedback.	1	2	3	4	5
6.5	eFundi is a good communication medium.	1	2	3	4	5
6.6	Other technology employed contributed positively to the subject (communication technology, the Internet)	1	2	3	4	5
6.7	Technological problems hampered my progress during this course.	1	2	3	4	5

In the following sections, “OM” refers to Operations Management and “ERP systems” refers to enterprise resources planning systems, as described in the textbook.

7.	Other issues affecting learning					
7.1	I am enrolled for more than one module in MBA. (Y/N)				Y	N
7.2	Issues in my personal and work life had a negative effect on my learning of OM principles.	1	2	3	4	5
7.3	Issues in my personal and work life had a positive effect on my learning of OM principles.	1	2	3	4	5

7.4	Geographical issues (distance between group members, distance from lectures, etc.) had a negative effect on my learning of OM principles.	1	2	3	4	5
7.5	Time constraints had a negative influence on my understanding of the OM principles.	1	2	3	4	5
7.6	Contents learnt in other subjects during the semester taught me some valuable OM lessons.	1	2	3	4	5
7.7	Study group work done for other MBA subjects had a positive effect on the community project	1	2	3	4	5
7.8	Our study group developed through working together in other subjects	1	2	3	4	5
7.9	Time taken for preparation for the rest of my MBA studies impacted the effort I put into this subject	1	2	3	4	5
7.10	Having to submit assignments for other modules had a negative effect on my study in this module	1	2	3	4	5
7.11	I could apply some learning from other modules in this module	1	2	3	4	5
7.12	My responsibilities at my work increased this semester	1	2	3	4	5
7.13	Schedule changes at work made it difficult	1	2	3	4	5
7.14	Political issues at work had an influence on my involvement in this module	1	2	3	4	5
7.15	My relationships with my fellow-workers affected my performance in this module	1	2	3	4	5
7.16	My workplace feels positive about me studying	1	2	3	4	5
7.17	Boundaries in my workplace prevented me from doing my projects well	1	2	3	4	5
7.18	I travel a lot for my work	1	2	3	4	5
7.19	My family supports me in my study	1	2	3	4	5
7.20	My family needs more of my time	1	2	3	4	5
7.21	Family engagements interfered with my studies	1	2	3	4	5
7.22	I had to tone down my studies due to my family's response to my involvement	1	2	3	4	5
7.23	Some of my friendships suffered as a result of this module	1	2	3	4	5
7.24	This module made a difference to my workplace	1	2	3	4	5
7.25	Applying what I heard in this module made me a better worker	1	2	3	4	5
7.26	I can already see the effect of this module on my career	1	2	3	4	5
7.27	I am a better manager due to this module	1	2	3	4	5
7.28	I understand my organisation better than when I started MBA	1	2	3	4	5
7.29	I can now see how the theory applies in my workplace	1	2	3	4	5
7.30	I have improved my networking skills due to my involvement in this module	1	2	3	4	5

7.31	I have already made some changes at my workplace since I started this module	1	2	3	4	5
7.32	As a result of this module I crossed more organisational boundaries than before	1	2	3	4	5

PART B: Your subject-related learning regarding operations management (OM)

This section tries to establish whether you have learnt operations management subject principles during the semester.

Give a value of 1 to 5 what your level of exposure at the start of the semester (second column) and the end of the semester (last column), where

1 = no exposure

2 = limited exposure

3 = moderate exposure

4 = significant exposure

5 = major exposure

8. Statements on learning of operations management (OM) principles: I, the student, have exposure to:		Before the start of the semester	After the semester
8.1	theoretical knowledge of OM	Before	After
8.2	practical exposure to OM	Before	After
8.3	understanding OM in my organisation	Before	After
8.4	understanding OM in a community organisation	Before	After
8.5	understanding the difference of operations between product-based and service (including public sector) organisations	Before	After
8.6	translating the theory of OM into layman's terms	Before	After
8.7	sharing the knowledge of OM acquired during the semester with other people at my workplace.	Before	After
8.8	OM principles in my private life	Before	After
8.9	the strategic impact of OM	Before	After
8.10	the operational impact of strategy	Before	After
8.11	forecasting	Before	After
8.12	the principles of total quality management	Before	After
8.13	business principles in general	Before	After
8.14	management principles in general	Before	After
8.15	project management principles	Before	After

8.16	product or service design	Before	After
8.17	process design principles	Before	After
8.18	layout decisions in my type of organisation	Before	After
8.19	supply chain management	Before	After
8.20	location decisions	Before	After
8.21	the principles of inventory management	Before	After
8.22	planning and scheduling	Before	After
8.23	ERP systems	Before	After

PART C: *Your level of generic (soft) skills before and after the semester*

Give a value of 1 to 5 in **each column** of how you rate your level of knowledge / skills before the start of the semester and at the end of the semester (now), where

1 = **This definitely does not describe the way I act**

2 = This does not describe the way I act

3 = The way I act

4 = This describes the way I act

5 = **This definitely describes the way I act**

NOTE, do this exercise answering all the questions from top to bottom in the first column, **as you think it was at the beginning of the semester**. Then **start again at the top** and rate answers the questions **as you experience them today, at the end of the semester**.

9. Statements on development of generic skills (graduate attributes required of an MBA)		At the start of the semester	At the end of the semester
9.1	<i>When I work toward something, it gets all my attention</i>	Before	After
9.2	<i>I keep focused on tasks I need to do even if I do not like them</i>	Before	After
9.3	<i>I become very aware of what I am doing when I am working towards a goal</i>	Before	After

9.4	<i>I make sure to track my progress regularly when I am working on a goal</i>	Before	After
9.5	<i>I pay close attention to my thoughts when I am working on something hard</i>	Before	After
9.6	<i>I know I can track my behaviour when working toward a goal</i>	Before	After
9.7	<i>When I set important goals for myself, I usually achieve them</i>	Before	After
9.8	<i>I seem capable of making clear plans for most problems that come up in my life</i>	Before	After
9.9	<i>The goals I achieve mean much to me</i>	Before	After
9.10	<i>I have learned that it is important to make plans</i>	Before	After
9.11	<i>The standards I set for myself are clear and make it easy for me to judge how well I am doing on a task</i>	Before	After
9.12	<i>I congratulate myself when I make some progress towards my goals</i>	Before	After
9.13	<i>I get myself through hard things by planning to enjoy myself afterwards</i>	Before	After
9.14	<i>I silently praise myself even when others do not praise me</i>	Before	After
9.15	<i>When I do something right, I take time to enjoy the feeling</i>	Before	After
9.16	<i>I give myself something special when I make some progress towards my goals</i>	Before	After
9.17	<i>I can communicate my viewpoints with clarity in English</i>	Before	After
9.18	<i>I can communicate my viewpoints with clarity in another language</i>	Before	After
9.19	<i>I find it easy to listen to what others are saying</i>	Before	After
9.20	<i>I find it easy to understand what others are saying</i>	Before	After
9.21	<i>I find it easy to confront people's problems when resolving conflicts</i>	Before	After
9.22	<i>I can use technology effectively to communicate with others</i>	Before	After
9.23	<i>I take care to use appropriate vocabulary and grammar when communicating with others</i>	Before	After
9.24	<i>I can gain support from others for recommendations and ideas</i>	Before	After

9.25	<i>I find it easy to persuade others</i>	Before	After
9.26	<i>I find it easy to influence others</i>	Before	After
9.27	<i>I find it easy to quickly gain respect from others</i>	Before	After
9.28	<i>I show respect for the views and contributions of other team members</i>	Before	After
9.29	<i>I make a favourable first impression</i>	Before	After
9.30	<i>I find it easy to make clear, concise presentations to others</i>	Before	After
9.31	<i>I find it easy to communicate effectively with people from different cultures</i>	Before	After
9.32	<i>I find it easy to communicate effectively with people from different backgrounds</i>	Before	After
9.33	<i>I find it easy to communicate effectively with people from different authority levels</i>	Before	After
9.34	<i>I find it easy to get cooperation and support from others when working in a team</i>	Before	After
9.35	<i>I consult others in the team</i>	Before	After
9.36	<i>I share my expertise in a team</i>	Before	After
9.37	<i>I share information in a team</i>	Before	After
9.38	<i>I am able to build effective networks of contacts to achieve my goals</i>	Before	After
9.39	<i>I seek to progress to roles of increased responsibility and influence in teams</i>	Before	After
9.40	<i>I make quick but clear decisions that spur others on towards action</i>	Before	After
9.41	<i>I can probe for further information to enhance my understanding of a problem</i>	Before	After
9.42	<i>I can structure information in a way that meets the needs of my audience</i>	Before	After
9.43	<i>I can initiate changes to make my work or life more satisfying and developmental</i>	Before	After
9.44	<i>I consider the complexities of the larger cultural, business and economic reality when approaching a problem or situation</i>	Before	After

9.45	<i>I offer unique and novel ideas that add new knowledge and insights to a problem or situation</i>	Before	After
9.46	<i>I am creative in achieving my goals by anticipating problems before they happen</i>	Before	After
9.47	<i>I usually set priorities with a proper sense of urgency and importance</i>	Before	After
9.48	<i>I follow up on goals, tasks and assignments to ensure successful completion</i>	Before	After
9.49	<i>I monitor my performance against deadlines and milestones</i>	Before	After
9.50	<i>I make sure that I keep myself up to date on technical knowledge and new developments in my field</i>	Before	After
9.51	<i>I am always on the lookout for ways to improve my knowledge and skills, and develop myself as a person</i>	Before	After
9.52	<i>I know how to ask the right questions to get needed information and to properly size up a situation</i>	Before	After
9.53	<i>I accept and tackle demanding goals with enthusiasm</i>	Before	After
9.54	<i>I make use of developmental or training opportunities to enhance my competencies, knowledge and skills</i>	Before	After
9.55	<i>I prefer to work under my own direction</i>	Before	After
9.56	<i>I can think in a disciplined and logical manner when approaching problems or situations</i>	Before	After
9.57	<i>I consider the consequences of solutions by examining their feasibility and weighing their impact within the larger cultural, business or economic reality</i>	Before	After
9.58	<i>My arguments for solutions are grounded in both subject-/ discipline-specific and general knowledge about global and local affairs</i>	Before	After
9.59	<i>I am aware of and adept at dealing with organisational or team politics</i>	Before	After
9.60	<i>I keep up to date with competitor information and market trends</i>	Before	After
9.61	<i>I have sound financial awareness</i>	Before	After
9.62	<i>When controlling costs and budgets, I usually think in terms of profit, loss and added value</i>	Before	After
9.63	<i>I find it easy to identify business opportunities for myself, my community or organisation</i>	Before	After
9.64	<i>I can write my ideas and opinions clearly to convince my audience</i>	Before	After

9.65	<i>I avoid using unnecessary jargon or complicated language when presenting my ideas or insights</i>	Before	After
9.66	<i>I find it easy to commit information to memory quickly</i>	Before	After
9.67	<i>I consider a wide range of alternatives prior to making a decision</i>	Before	After
9.68	<i>The solutions I offer make a positive difference in my personal life, community or workplace</i>	Before	After
9.69	<i>I spend a lot of time surfing the internet to find new information on search engines</i>	Before	After
9.70	<i>I find it easy to access the information I need to solve problems or make decisions</i>	Before	After
9.71	<i>I avoid jumping to premature conclusions</i>	Before	After
9.72	<i>I try to find the real cause of problems before taking action</i>	Before	After
9.73	<i>I usually set realistic goals</i>	Before	After
9.74	<i>I take action to achieve my goals</i>	Before	After
9.75	<i>I develop plans for specific goals and tasks</i>	Before	After
9.76	<i>I use time efficiently</i>	Before	After
9.77	<i>I find it easy to meet deadlines</i>	Before	After
9.78	<i>I can identify the resources needed to accomplish tasks</i>	Before	After
9.79	<i>I accept responsibility for the results of my decisions and actions</i>	Before	After
9.80	<i>I personally take the credit or blame for the results of my work</i>	Before	After
9.81	<i>I uphold the ethics and values of my profession, community or workplace in all I do</i>	Before	After
9.82	<i>I encourage responsible behaviour towards the community and the environment</i>	Before	After
9.83	<i>I find it easy to provide direction to others, and to motivate and empower them</i>	Before	After
9.84	<i>I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.</i>	Before	After
9.85	<i>I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.</i>	Before	After

9.86	<i>I am conscious of the cultural knowledge I apply to cross-cultural interactions.</i>	Before	After
9.87	<i>I check the accuracy of my cultural knowledge as I interact with people from different cultures.</i>	Before	After
9.88	<i>I know the legal and economic systems of other cultures.</i>	Before	After
9.89	<i>I know the rules (e.g., vocabulary, grammar) of other languages.</i>	Before	After
9.90	<i>I know the cultural values and religious beliefs of other cultures.</i>	Before	After
9.91	<i>I know the marriage systems of other cultures.</i>	Before	After
9.92	<i>I know the arts and crafts of other cultures.</i>	Before	After
9.93	<i>I know the rules for expressing nonverbal behaviours in other cultures.</i>	Before	After
9.94	<i>I enjoy interacting with people from different cultures.</i>	Before	After
9.95	<i>I am confident that I can socialize with locals in a culture that is unfamiliar to me.</i>	Before	After
9.96	<i>I am sure I can deal with the stresses of adjusting to a culture that is new to me.</i>	Before	After
9.97	<i>I enjoy living in cultures that are unfamiliar to me.</i>	Before	After
9.98	<i>I am confident that I can get accustomed to the shopping conditions in a different culture.</i>	Before	After
9.99	<i>I change my verbal behaviour (e.g., accent, tone) when a cross-cultural interaction requires it.</i>	Before	After
9.100	<i>I use pause and silence differently to suit different cross-cultural situations.</i>	Before	After
9.101	<i>I vary the rate of my speaking when a cross-cultural situation requires it.</i>	Before	After
9.102	<i>I change my nonverbal behaviour when a cross-cultural situation requires it.</i>	Before	After
9.103	<i>I alter my facial expressions when a cross-cultural interaction requires it.</i>	Before	After
9.104	<i>I believe my culture to be different from the others surrounding me.</i>	Before	After
9.105	<i>I am comfortable in settings with people who exhibit values or beliefs different from my own.</i>	Before	After
9.106	<i>There are times when racial statements should be ignored.</i>	Before	After

9.107 <i>I avoid imposing values that may conflict (or be inconsistent) with those of cultures groups other than my own.</i>	Before	After
9.108 <i>It is important to identify immediately the ethnic groups of a person we meet or communicate with.</i>	Before	After
9.109 <i>I understand and accept that family is defined differently by different cultures (e.g. extended family members, fictive kin, godparents.)</i>	Before	After
9.110 <i>I accept and respect that male-female roles in families may vary significantly among different cultures.</i>	Before	After
9.111 <i>I understand that age and seniority must be considered in interactions with individuals and families.</i>	Before	After
9.112 <i>I accept that religion and other beliefs may influence people' reaction.</i>	Before	After
9.113 <i>I accept and respect that customs and beliefs about daily life are applied different from culture to culture.</i>	Before	After
9.114 <i>I offer information and opinions</i>	Before	After
9.115 <i>I summarise what is happening in the group</i>	Before	After
9.116 <i>When there is a problem I try to identify what is happening</i>	Before	After
9.117 <i>I start the group working</i>	Before	After
9.118 <i>I suggest directions the group can take</i>	Before	After
9.119 <i>I listen actively</i>	Before	After
9.120 <i>I give positive feedback to other members of the group</i>	Before	After
9.121 <i>I compromise</i>	Before	After
9.122 <i>I help relieve tension</i>	Before	After
9.123 <i>I talk</i>	Before	After
9.124 <i>I ensure that meeting times and places are arranged</i>	Before	After
9.125 <i>I try to observe what is happening in the group</i>	Before	After
9.126 <i>I try to help solve problems</i>	Before	After

9.127 <i>I take responsibility for ensuring that tasks are completed</i>	Before	After
9.128 <i>I like the group to be having a good time</i>	Before	After
9.129 <i>I listen attentively (eye contact, comprehends) when team-mates are talking</i>	Before	After
9.130 <i>I give positive feedback to team-mates</i>	Before	After
9.131 <i>I politely ask for input from a quiet team-mates</i>	Before	After
9.132 <i>I offer task-related input during team discussions</i>	Before	After
9.133 <i>I take notes during team discussions</i>	Before	After
9.134 <i>I attempt to achieve win-win resolutions when conflict arises</i>	Before	After
9.135 <i>I keep the team focused and on track</i>	Before	After
9.136 <i>I seek clarification by asking questions or paraphrasing</i>	Before	After
9.137 <i>I call teammates by their first name</i>	Before	After
9.138 <i>I summarize areas of team agreement and disagreement</i>	Before	After
9.139 <i>I constructively criticize team-mate ideas, not the person</i>	Before	After
9.140 <i>I appropriately use humour to help team stay relaxed</i>	Before	After
9.141 <i>I answer team-mates' questions</i>	Before	After
9.142 <i>I express empathy for team-mate feelings.</i>	Before	After
9.143 <i>I fail to offer verbal input to team discussions</i>	Before	After
9.144 <i>I interrupt team-mates who are talking</i>	Before	After
9.145 <i>I give personalised, derogatory criticism to teammate</i>	Before	After
9.146 <i>I bring up topics that are completely unrelated to the team discussion</i>	Before	After
9.147 <i>I start side conversations while team-mates are talking</i>	Before	After

9.148 <i>I dominate discussions by failing to allow others to talk</i>	Before	After
9.149 <i>I refuse to compromise</i>	Before	After
9.150 <i>I insist that my ideas are the only correct ones</i>	Before	After
9.151 <i>I often set a goal but later choose to pursue a different one.</i>	Before	After
9.152 <i>I have been obsessed with a certain idea or project for a short time but later lost interest.</i>	Before	After
9.153 <i>I have difficulty maintaining my focus on projects that take more than a few months to complete.</i>	Before	After
9.154 <i>New ideas and projects sometimes distract me from previous ones.</i>	Before	After
9.155 <i>I finish whatever I begin.</i>	Before	After
9.156 <i>Setbacks don't discourage me.</i>	Before	After
9.157 <i>I am diligent</i>	Before	After
9.158 <i>I am a hard worker</i>	Before	After
9.159 <i>I get chores done right away</i>	Before	After
9.160 <i>I often forget to put things back in their proper place</i>	Before	After
9.161 <i>I am relaxed most of the time</i>	Before	After
9.162 <i>I like order</i>	Before	After
9.163 <i>I make a mess of things</i>	Before	After
9.164 <i>I have found a meaningful career</i>	Before	After
9.165 <i>I view my work as contributing to my personal growth.</i>	Before	After
9.166 <i>My work really makes no difference to the world.</i>	Before	After
9.167 <i>I understand how my work contributes to my life's meaning.</i>	Before	After
9.168 <i>I have a good sense of what makes my job meaningful.</i>	Before	After

9.169 <i>I know my work makes a positive difference in the world.</i>	Before	After
9.170 <i>My work helps me better understand myself.</i>	Before	After
9.171 <i>I have discovered work that has a satisfying purpose.</i>	Before	After
9.172 <i>My work helps me make sense of the world around me.</i>	Before	After
9.173 <i>The work I do serves a greater purpose</i>	Before	After
9.174 <i>I am actively looking for other jobs</i>	Before	After
9.175 <i>I feel that I could leave this job</i>	Before	After
9.176 <i>If I was completely free to choose I would leave this job</i>	Before	After
9.177 <i>I don't jump to conclusions.</i>	Before	After
9.178 <i>I think before I speak.</i>	Before	After
9.179 <i>I don't take action without having all the facts</i>	Before	After
9.180 <i>I have a good memory for facts, dates, and details.</i>	Before	After
9.181 <i>I am very good at remembering the things I have committed to do.</i>	Before	After
9.182 <i>I seldom need reminders to complete tasks.</i>	Before	After
9.183 <i>My emotions seldom get in the way when performing on the job.</i>	Before	After
9.184 <i>Little things do not affect me emotionally or distract me from the task at hand.</i>	Before	After
9.185 <i>I can defer my personal feelings until after a task has been completed.</i>	Before	After
9.186 <i>No matter what the task, I believe in getting started as soon as possible.</i>	Before	After
9.187 <i>Procrastination is usually not a problem for me.</i>	Before	After
9.188 <i>I seldom leave tasks to the last minute.</i>	Before	After
9.189 <i>I find it easy to stay focused on my work</i>	Before	After

9.190 <i>Once I start an assignment, I work diligently until it's completed.</i>	Before	After
9.191 <i>Even when interrupted, I find it easy to get back and complete the job at hand.</i>	Before	After
9.192 <i>When I plan out my day, I identify priorities and stick to them.</i>	Before	After
9.193 <i>When I have a lot to do, I can easily focus on the most important things.</i>	Before	After
9.194 <i>I typically break big tasks down into subtasks and timelines.</i>	Before	After
9.195 <i>I am an organized person</i>	Before	After
9.196 <i>It is natural for me to keep my work area neat and organized.</i>	Before	After
9.197 <i>I am good at maintaining systems for organizing my work.</i>	Before	After

PART D: Your teamwork, problem-solving and communication skills. This part of the questionnaire will be completed in class

1 TEAM EXERCISE

In this test you will take part **in your study groups**. The group must position themselves more or less in a circle (or something resembling a circle). You have five minutes to read the scenario and ten minutes for a group discussion. After that a scoring sheet will be given to you to assess the skills of the people in your group.

Number the people in the group from one, so that the person on your left has a number one less than yours and the person on your right has a number one more than yours.

COMMUNICATION AND TEAMWORK SKILL TEST

This test consists of two sections. You are required to complete each section thoroughly, after reading the scenario.

SCENARIO

ABC Hotel (Pty) Ltd is a cosy country hotel in the Drakensberg. The hotel was started in 1999 by AB Charles.

For the first four years the business struggled, but a sudden boom in tourism, combined with a move towards cosier holiday destinations saw ABC Hotel's business growing rapidly. ABC has become a favourite holiday destination with South Africans. With the economy that is struggling, the hotel industry dropped considerably and the business has stagnated slightly for ABC Hotel. Since airline ticket prices have dropped, competition is not only local, but increasingly global in nature.

With the ageing infrastructure of ABC hotel and the remoteness of its location, the business is in dire need of some new energy and revolutionising the business of ABC is therefore vital and a changed approach is needed. ABC would need to grow its business amongst foreign tourists

without losing the South African tourist market. To be able to achieve this, AB went to an international tourist fair where he saw the following in the fair's brochure:

"Hottest new tourism opportunity in 2018

Morocco, the new virtual holiday destination: The Kgalid Hotel group has announced a new holiday system. Three hotels in the group have joined hands to give visitors a virtual holiday experience: When tourists book into any of the group's hotels, the visitors are checked in at the hotel and given the opportunity to visit the holographic lounge. The lounge is in the form of a bus, but the bus is a four-dimensional theatre, where people can not just see and hear scenes, but are exposed to smells, breezes, temperatures and all other senses. When the bus starts, the outside windows give an actual view of a trip through the Alps Mountains, complete with a trip on a ski lift, a stop-over at a group of people singing traditional Swiss folk songs. Waiters on the bus serves traditional Swiss food, and the technology is so advanced that you could even have a discussion with some of the people that are on this 4D movie cast. "Trips to" the Amazon, Peru, Serengeti and Niagara Falls are also available at Kgalid. This innovation has almost doubled the occupancy rate at Kgalid's hotels. Kgalid is presently looking for partners resorts to sell their technology to on a franchise basis."

Exercise

As an employee of ABC, you and other employees form a group of five in order to debate a strategic meeting of the new opportunity. The group should discuss the influence of the new opportunity on the different business functions.

- Describe the positive AND negative aspects of the new trend, keeping in mind changes in terms of all the business functions.

- Identify the most important function which would have an impact on the business.

Once you have discussed the issue, a scoring sheet will be given to you to gauge the communication and teamwork in the team.

SCORING SHEET: Communication exercise

Your unique code:

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

MEASURING TOOL FOR ORAL COMMUNICATION AND TEAMWORK SKILLS

D1 – Oral communication (group exercise)

Once the group has discussed the issue, please rate first the person to your left, then the person to your right, and then yourself on a five-point scale, using the following scale (just place a single digit in each box. The bullets are simply there to help you assess the skill):

1	2	3	4	5
Not skilled	Substandard (weakly skilled)	Up to standard (fairly skilled)	Above standard (well-skilled)	Skilled

Write down a number from one to five in the appropriate block. Start by answering all the questions about the person to your left, then all the questions about the person to your right, and then all the questions about yourself				
10. Oral communication rating scale		Person to your left	Person to your right	Yourself
• The number of the person you are assessing				
10.1 Vocabulary 2	- Using words that are appropriate to the audience - Chooses language that are compelling and enhances the effectiveness of what is said - Speaking in a business-like manner			

10.2 3	Listening skills	- Listening to everything that is said in the team - Respecting others - Using ideas to develop new ones (piggy backing).			
10.3 4	Oral delivery	- Speaks in a clear voice - Using correct, precise pronunciation of words - Is audible: Everything can be heard (Does not mumble)			
10.4	Non-verbal and verbal correlation	Using body language that correlates with the message that is delivered.			
10.5	Delivers message convincingly	- Using appropriate delivery techniques (eye contact, posture, gesture) - Appearing polished and confident			
10.6 5	Managing of conflict	- Dealing with conflict in a positive manner - Listening to what others say and do not interrupt them - Avoiding conflict			

D2 – Graduate teamwork assessment sheet (*Group exercise*)

Once the group has discussed the issue, please rate first the person to your left, then the person to your right, and then yourself on a five-point scale, using the following scale:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

Write down a number from one to five in the appropriate block. Start by answering all the questions about the person to your left, then all the questions about the person to your right, and then all the questions about yourself				
11. Teamwork skills		Person to your left	Person to your right	Yourself
11.1 Participating	- Contributing to the team assignment. - Actively involved with the work			

11.2 Questioning	Asking questions in the team to understand the goal of the project and to explore further thinking.			
11.3 Listening	Listening to everything said in the team and using ideas to help develop new ones (piggy-backing).			
11.4 Communication	Communicating with the team members and sharing ideas and thinking with the team.			
11.5 Conflict	Trying to avoid conflict in the team and when conflict arises, responding positively to conflict.			
11.6 Leadership	Keeping the team on track and fostering a constructive team climate.			
11.7 Respecting	Respecting all the opinions in the team and praising other good ideas and thinking.			
11.8 Persuading	Exchanging ideas, defending own ideas and explain ideas to the team.			
11.9 Adaptability	- Adapt to team choices and team work ways. - Being able to work with the team.			
11.10 Helping	Help the team with struggles and problems and offering assistance.			
11.11 Responsibility	Accepting responsibility within the team and working hard to do his/her/my best with his/her/my task.			
11.12 Individual	- Contributing in the team. - Having relevant knowledge, skills and abilities to offer in the team.			
11.13 Diversity	- Using a diverse environment to build a strong team - Able to work with different individuals.			
11.14 Creativity	- Being open-minded and offer original ideas. - Encouraging originality rather than the same thing every time.			
11.15 Evaluating	Evaluating the team performance and expecting quality work.			

SECTION D3-D5: Problem-solving tests (*Individual exercise*)

This test consists of three sections. You are required to complete each section thoroughly. **D3**

– Problem-solving concepts (*Individual exercise*)

You are appointed as a front desk manager at ABC Hotel. One of the clients is unhappy about the service she received, and you are asked to solve the problem for her.

To solve this problem you need to follow a specific process. Use the different options in the boxes below and develop a process that you will use to solve the problem. You may only choose one option in each colour labelled block below. Each block represents a step in the process and each block may only be used once. The chosen first block will represent step one, with the second chosen block as step two and continuing to form your process. For example: Step 1: Black 4, Step 2: Yellow 3

Red Block

1. Distribute the resources in the business to solve the problem by using timelines or action plans.
2. Choose one of the resources in the business and describe the use of this resource for solving the problem.
3. Describe the different resources investigated and compare it as applicable to the problem.
4. Explain the existing resources used in

Green Block

1. Evaluate the opportunities and threats of the problem and select one solution.
2. Apply another business' problem strategy to this problem to select a solution.
3. Evaluate the alternative solutions and select a solution.
4. Provide a summary of the problem and

Orange Block

1. Write my own new explanatory framework of the problem.
2. Explain the problem using examples.
3. Identify the value of the problem in terms of routine and non-routine solutions.
4. Provide possible solutions applicable to the

Blue Block

Write my own new definition of the problem.
Define the problem with examples.
Identify all the aspects of the problem.
Evaluate the nature of the problem.

Purple Block

Create a new solution through combining existing solutions together.
Explain and assess the solutions.
Submit regular progress reports or updates to ensure workable solutions.
Choose one of the solutions determine the cost

12. Answer:

Step 1:

Step 2:

Step 3:

Step 4:

Step 5:

SCENARIO 2

Study the following case study. Answer all the questions. If you are unable to answer a question, you must fully explain why you are not able to answer the question. *You have been given a whole page for each question so as not to guide you in how long your answer should be. If you need more space, continue at the back of the page. If you need less space, simply don't use all that is given.*

A few months ago, you were appointed as the food and beverage manager at ABC Hotel (Pty) Ltd. ABC Hotel (Pty) Ltd is a cosy country hotel in the Drakensberg with 150 rooms. The hotel was started in 1999 by AB Charles. For the first four years the business struggled, but a sudden boom in tourism, combined with a move towards cosier holiday destinations saw ABC hotel's business growing rapidly. ABC has become a favourite holiday destination with South Africans. With the economy that is struggling, the hotel industry dropped considerably and the business has stagnated slightly for ABC Hotel. Since airline ticket prices have dropped, competition is not only local, but increasingly global in nature. In off-peak times, the hotel is often managed on quiet shifts by one of the staff members.

Your job as food and beverage manager is to look after the kitchen, bars, dining lounge, but also to order stock for the kitchen, manage the inventory and look after the hygiene of anything that has to do with food and beverages, but you are also required to run errands for directors of the company and lock the linen store room every day. As an employee of ABC, you report to the hotel manager at the end of every three months. During quiet times the management of the hotel sometimes take turns to manage the whole hotel.

One day, during a patch of extremely bad weather, you are acting as hotel manager and you hear a funny noise coming out of one of the conference rooms. You cannot quite make out what the sound is, but you realise that some live animal must be locked in the room. You have no access to the conference room and the conference manager has taken the keys with him on a family reunion in Phalaborwa. The owners are overseas on a marketing trip. You realise that the matter needs urgent attention and you must quickly decide how to handle the situation.

13. After reading this scenario, identify as many problems as you can and motivate why you think it is a problem.
14. Using the problems that you mentioned in 14, what is, according to you, the most important problem that needs to be solved? Why is it more important to solve this problem than the others you mentioned in 14?
15. Define a problem statement for ABC Hotel.
16. Evaluate the alternatives by explaining the advantages and disadvantages of the alternatives for the business.
17. Which alternative in 16 is according to you the best solution for the problem? Motivate your choice.
18. Explain how you would implement the solution chosen in 17 and describe the influence on the business' resources.
19. Creative problem-solving Read the problem provided and explain thoroughly how you would solve the problem at hand.
20. You have taken your neighbour's children to the fun fare at Gold Reef City? After two hours you realise that their five-year old son is missing. How will you find him?

Consider many ways.

Attachment 4. **Reflective journal templates.**

Note: Blank spaces are given on the original templates, but these are not shown here.

Expectations: Operations Management

Student number

Initials and surname:

First name (What should I call you?):

Mafikeng / Potch / Vaal (Circle correct one)

Tell me something about yourself:

.....

Please share your expectations of the Operations Management module with me:

.....

Reflective journal: Contact 1.

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

Your secret code

If you need more space, continue on the reverse side.

- 1 What is the most important thing that you have learnt about today's topics? (Job of the operations manager and Operations strategy)

.....

- 2 What is there about today's topic that you still don't understand?

.....

- 3 In terms of the soft skills of communication, teamwork, problem-solving, self-management and cultural awareness, how would you describe your skill level at the beginning of your MBA?

.....

- 4 Today's lesson was pretty much traditional lecturing with a PowerPoint. In your experience, to what extent did it contribute to your development of these soft skills? Explain your answer.

.....

- 5 To what extent did the rest of the activities during the study school contribute to your development of these skills?

.....

- 6 Reflect on what you need to do this semester to develop these soft skills if they are not specifically taught in MBA.

.....

Reflective journal, *Contact 2*

Your unique code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

1 What are the most important things that you have learnt before / during this contact?

.....

2 What is there about the topics that you still do not understand?

.....

3 How was your experience with the method of presentation (Slides before, applications and further clarification during class)?

.....

4 At the study school, how did you experience the guest speaker's talk?

.....

5 In many cases this week was your first experience in your study group. What lessons did you learn about teamwork skills?

.....

6 What (if anything) will you do differently to let the team function even better?

.....

7 What do you perceive to be the biggest gaps in your makeup to successfully complete this semester?

.....

8 How will you use the individual and group projects to address these gaps in your makeup?

.....

Your honest feedback is appreciated!

Johan Jordaan

Reflective journal, *Contact 3*

Your secret code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

- 1 What are the most important things that you have learnt before / during this contact?
.....
- 2 What is there about these topics that you still do not understand?
.....
- 3 Do the simulations / games add value? Explain.
.....
- 4 State, in order of importance, your three most important reasons for choosing the NWU for doing an MBA. (Please be brutally honest)
.....
- 5 Think of a problem that you solved lately (either in your work, your private life or while suggesting changes to be made in your individual assignment). List the steps that you actually followed when solving this problem.
.....
- 6 There is a major overlap between the typical problem-solving steps and the steps involved in new product development, as discussed in today's lesson. Do you think that this will have any effect on how you plan to solve any future problems? Explain.
.....
- 7 Is there anything that you plan to do differently in future when you need to solve a problem? Explain
.....
- 8 Is there anything else that you want me to know?
.....

Your honest feedback is appreciated!

Johan Jordaan

Reflective journal, Contact 4

Your unique code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

1 What are the most important things that you have learnt before / during this contact?

.....

2 What is there about the topics that you still do not understand?

.....

3 How do you experience the discussions that take place within industry groups?

.....

4 In your class, study group, individual project and/or community organisation, you have probably experienced difference of opinions based on different cultural backgrounds. Reflect on your ability to communicate and work with people who are from a different background? To what extent are you at ease to work with them? Explain.

.....

5 What specific skill(s) would you really like to acquire to help you gain the maximum from these differences? Explain.

.....

6 Research states that one of the best ways to develop cultural awareness is while doing community projects. What do you think you should do during the remainder of the semester (in your community organisation and elsewhere) to develop these skills? Explain.

.....

7 Set yourself a measurable goal to achieve in terms of cultural intelligence by the end of the semester.

.....

Your honest feedback is appreciated!

Johan Jordaan

Reflective journal, Contact 5

Your unique code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

1 What are the most important things that you have learnt before / during this contact?

.....

2 What is there about the topics that you still do not understand?

.....

3 Do my shirts with a cartoon summarising the crux of the lesson any value at all? If you want to, explain your answer

.....

4 What adds the most value to the lesson, the community project group feedback or the individual feedback (like today's lesson)?

.....

5 Self-management is a composite of a number of constructs, including grit, conscientiousness, ethical behaviour, risk-taking, locus of control, self-efficacy, initiative, and goalsetting. Do you experience that any of these skills have already started developing since you started MBA? Explain.

.....

6 On which of these skills do you still have to work most? Explain your answer?

.....

7 What do you need to change to develop those skills mentioned in question 5's answer? Explain

.....

8 Set yourself a goal for developing your self-management skills for the rest of your MBA career. What is this goal?

.....

Your honest feedback is appreciated!

Johan Jordaan

Reflective journal, Contact 6

Your unique code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

1 What are the most important things that you have learnt before / during this contact?

.....

2 What is there about the topics that you still do not understand?

.....

3 Do you already see a change in how you manage/operate in your organisation or how you understand the business based on what you have learnt in this module so far? Please explain your answer.

.....

4 I have made a point of challenging you to ask critical questions when doing your individual assignments. To what extent has your thinking become more critically in general since the beginning of the semester? Explain your answer.

.....

5 Critical thinking skills is sometimes divided into a few categories: Creative thinking, analytic thinking questioning and solution orientation. Which of these skills have developed most this year? Explain

.....

6 On which of these skills do you still have to work most? Explain

.....

7 What do you need to develop those skills mentioned in Question 5's answer? Explain

.....

Your honest feedback is appreciated!

Johan Jordaan

Reflective journal, Contact 7

You unique code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

1 What are the most important things that you have learnt before / during this contact?

.....

2 What is there about the topics that you still do not understand?

.....

3 Do the videos shown (not just today's videos) add value? Explain.

.....

4 Communication skill consists of written and oral communication skills, listening skills, assertiveness, empathy and giving feedback (amongst others). During the semester you had to communicate with various stakeholders? Did it have any effect on your communication skills? Explain your answer.

.....

5 What do you think you need to do to improve your communication skills? Explain

.....

- 6 During the semester we have done a number of things in class that are intended to aid learning. On a scale of 1 to 5, where 1 = not at all and 5 = really a lot, please rate EACH of the following activities in terms of EACH category (i.e. you must put a digit in EACH block in the following table).

	Contributes to learning	Is relevant to the	Helps me to apply the information at work	Contributes to development of soft skills	Helps with long-term retention of knowledge	Benefits other subjects in MPA process	Is fun / enjoyable	Helps me to network	Helps me with the community project
Normal lecturing (Contact 0 at study school)									
The flipped classroom (slides with voice at home, class for other activities)									
Answering questions students asked on their assignment template									
Games and simulations									
Viewing videos in class									
Discussion in industry groups									
Discussion in diverse groups									
T-shirts with cartoons									
Student community project presentations									
Student individual project talks / introductions									
Individual voice feedback									
Reflection sheets at the end of the lesson									
Making up songs and rhymes									
The lecturer knowing our names									
The dedication/prayer at the beginning of the lesson									

Your honest feedback is appreciated!

Johan Jordaan

Reflective journal, Contact 8

Your unique code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

1 *What are the most important learning points that you will remember from the community project?*

.....

2 *Rate your personal effort/level of involvement in the project (getting your hands dirty!). Explain your answer.*

.....

3 *What are the most important learning points that you will remember from the community project?*

.....

3 *What is the biggest change that the community project caused in yourself? (If no change, please say so).*

.....

4 *List the attributes/skills that you think the community project has developed in you? If none, please say so.*

.....

5 *Did the community project contribute towards your understanding of the subject theory? Please explain.*

.....

6 *What do you think we must change to the community project or how can we improve it?*

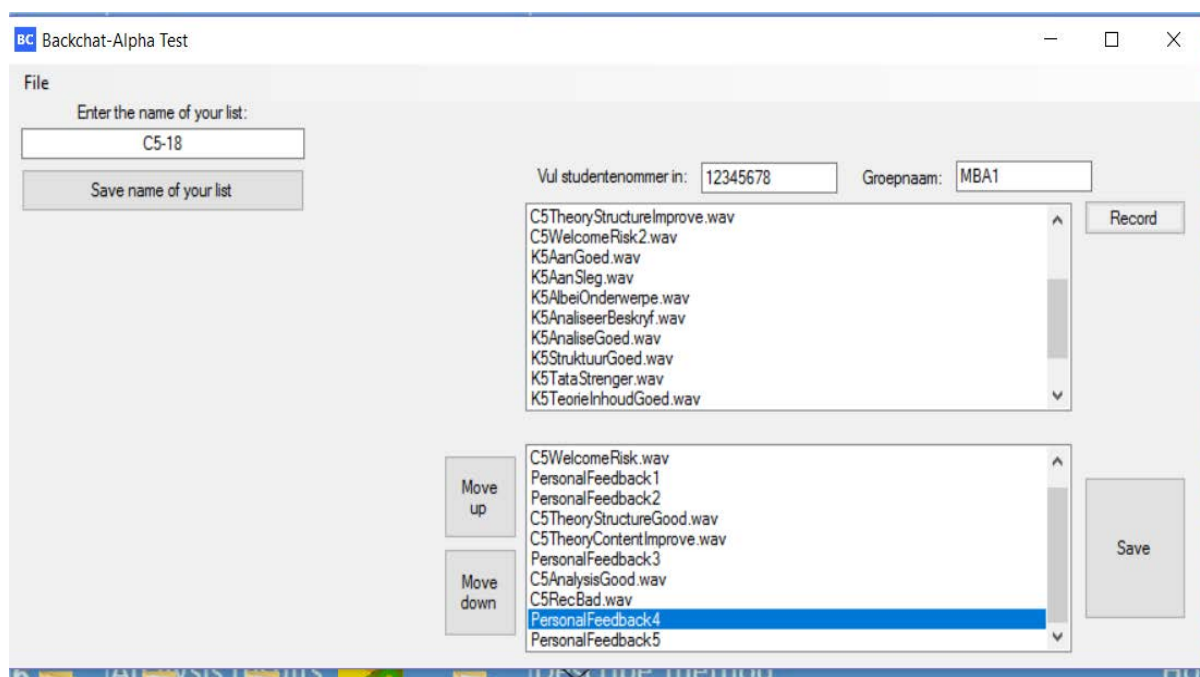
.....

Your honest feedback is appreciated!

Johan Jordaan

Attachment 5. Description of the Backchat™ voice feedback program

Backchat™ is a software program that allows you to pre-record “snippets” of feedback that would be valuable to a number of students. When students’ assignments are marked, the allows the lecturer to record pieces of tailor-made feedback in-between the pre-recorded snippets. When the recording is saved, the different recordings are then combined into one seamless recording, which could be distributed to students. A screenshot of the Backchat home screen shows how the standard snippets are listed in the top space and the ones used are listed in the bottom space, with the names of the general recordings starting with “C5” (named by the lecturer that recorded them in this case, because these specific recordings were for Contact 5) and the ones specifically recorded for student number 12345678 starting with “Personal feedback”. The student then receives a single file uploaded on the LMS dropbox, where all these pieces are combined into one single wav-file.



Attachment 6. Voice feedback transcript

George,

This is the second-last voice feedback for this semester, so, welcome to this. I've summarised all your feedback from last that you've given on the reflection for and a couple of things emerged: very interesting. First thing: A few people asked what "grit" is. It's one of the emerging things. Let me tell you where it started: Very briefly, a lady in America (University of Maryland, I think) thought her son was never going to get a job. He scraped through his degree because he was so focused on swimming. He wanted to be an Olympic swimmer. He did everything... He organised his classes around swimming practice. He organised his courses: he arranged courses and dropped other courses to fit in with the swimming timetable. In the end you got a job from before his peers, even the people that got their degrees cum laude, and when he went to the people who employed him, they said they were looking for somebody who is willing to pursue a goal above anything else, and that's what they call grit. So it has become one of the more important research areas in industrial psychology nowadays. So credit is that desire to achieve something about anything else... That thing that drives you. It has to do with goalsetting, but is more this inherent desire to achieve something. That is the definition.

A few of you asked me about conscientiousness and ethical behaviour. To a large extent that is a decision you make. It's not a psychological issue; it is a decision you make to say I'm going to get this thing done, yes or no. I am going to act ethically. Just as much as unethical behaviour is a decision you make so, if you don't find that you make ethical decisions or behave ethically, you can change that by making a decision. You heard so many stories about criminals, whether they have a spiritual experience or something, but they changed their lives in one decision. It is a decision to become ethical.

Just one short word on goalsetting: What I found, and I do that in my consulting career as well, is that goalsetting shouldn't be honed on how big the decision is that you need to make, but it should be based on what you are ready to tackle and what you think can be a guaranteed success. I'm given an industrial example: if a certain business know they have to survive by improving their profits by 20%... If they not going to improve their profits by 20%, they are not going to survive. If this goal is forced about upon everybody and the people that need to do the job are not ready for 20%, I can guarantee you it's going to be a failure. But if management goes to the employees and say: Okay, based on what you know and you think you can achieve, you give me a goal and they decide on 5%, and everybody is willing to do that, that's 5% is actually a far more valuable goal, because they are likely to exceed that, and that will grow their goalsetting skill, whereas if you

can get it done in a fairly short time, in the next cycle you can probably reach 20%. So, the secret to successful goalsetting is: set yourself manageable goals. Don't try and win the Comrades if you have never run a Comrades Marathon before. Try and finish the Comrades first time round, because that is a manageable goal. So go and set yourself easy goals, and if you set easy goals, make sure you achieve that easy one before you set a little bit harder one. That the way to work and goalsetting skill. The last question I asked you is to set yourself a goal: a good goal is... They talk about smart goals. (You've probably heard about this in your workplace quite often). A smart goal is: specific, measurable, aligned, realistic and time-bound: it's very specific, you can measure the result, it is aligned with what you want to achieve, it is realistic within the constraints, and there is a time limit. So, to say I'm going to win the Comrades is not necessarily a smart goal. To say that I am going to complete next year's Comrades in 10 hours 55 minutes after one year's practice is probably more smart than a vague goal. Think of it: It is specific (10 hours 55 minutes), time bound (next year),, it is aligned with what you want to do (it will guide your direction and your training), it's more realistic than saying I'm going to win it, (what is the other one?), but you see what I mean. So when you set goals, just check them against those smart parameters: specific, measurable, aligned, realistic, time bound. That's also why say, start small. If you set manageable goals, they are probably smart.

The two issues that most of you asked me to address that you feel you fall short on, are linked, they are related: initiative and risk-taking. A lot of you said to me that you think you have to work on risk-taking. Now, same as goalsetting, risk-taking is... The reason why we are scared to take risks is that we often take too big a risk and then we are scared of failing. So, I've read about risk-taking and I came across some very nice tips on how to less risk averse, in other words, become more inclined to take risks: the first one is, start with small risks (exactly what I said about goalsetting). Don't start with larger risks, start with small ones. If you scared to get on a roof, get on a 1 m wall, and from there get on a 1.5 m wall. If you scared to go into the water, first going to the shallow water. Start with small ones and gradually increase the risk, because gradually your risk fear will disappear. Second thing is: if it's really a risk, imagine what the worst case scenario that can happen and give yourself a solution to that. Often the worst case scenario is not that bad. If you are scared of the risk of going from one job to another one, what is the worst thing that can happen? The worst that can happen is probably that you might not like the new one. Prepare yourself for that. Keep your back door open if you want, that it is always possible to go back to the previous job. Don't burn your bridges. If you are scared to start running, you want to take part in a new sport and you are scared that people are going to laugh at you, you want to start athletics for example. What is the worst thing that can happen? The worst thing that can happen is that

you won't make it. Is that really that bad? If you don't try it, you will never know and you wouldn't have made it in any case. So imagine the worst case scenario and give yourself a solution to the worst case scenario: see it in perspective. Third thing: have a portfolio of options: let's say you want to start athletics and you are scared to do it immediately. Maybe one option is to go and play football until you are fit. Maybe start jogging first and then switch to athletics. Give yourself a portfolio and then decide from that. Then at least you will start doing something. One thing, and that is very difficult for some, is that we need the courage to not know. Anybody is scared of the unknown. I have read that they say that babies are born with only two fears: loud noise and to fall. The rest all learned behaviour: You can put this make next to a baby and the baby wouldn't be scared of it. So get over all these fears. They are learned behaviour in any case. I never used to have vertigo, until my sister told me to get off the roof because I was going to fall. From that date I was scared of heights, until I started a roofing business where you had to get on the roof and on the trusses all the time. Remember, starting over from Christmas when you scared of heights is probably not the smartest choice. This business cured my vertigo. So you address the fear by attacking it head-on: you get good at risk-taking by taking the risk.

In hindsight, in my life I've always been sorrier about the things that I haven't done and should have, then things that I have done and shouldn't have. In other words, not doing something, or not taking the risk is sometimes a bigger risk than doing it. Okay, so much for the questions you asked. Let us get back to your assignment feedback.

Looking at the content of the theory, it looks good...the theory page per chapter. If, by this time, you didn't know what I wanted, I would have been worried. And yes, I also like the structure of the theory pages, the layout is good. Getting to the analysis, it is quite good. I think you have really analysed how this works at the business, not just describing. Looking at your recommendations, the cell phone industry where you work is so competitive: you cannot afford not to have systems... I mean you're all business is built on her technological system. The whole cell phone network is system driven. Cannot afford to have systems that are not integrated and absolutely optimal. I think that these recommendations you given are to the point, I mean, your organisation rests on a good ERP system, a good database, good customer records, all those things. Extremely important.

I've given you 75%. You will see I get stricter as the semester goes on, and the reason for that is twofold: First, the number of students that quit in their second year is on the rise, and the general analysis is that the first year seems to be too easy, because the marks are so high. What that entails is, MBA is a very prestigious qualification, and you do not want to make it cheap to get it

cum laude. You need to be an exceptional student to cum this degree, and I am trying to get that imbalance right. So if I'm getting stricter, forgive me. The second reason is that you should know what I expect, so I can be stricter.

Okay, bye. I shall see you in class.

Attachment 7. **Example of template: Complete (long) submission**

Use this first page for all your submissions. Only change the part in italics between submissions. Feel free to submit in Afrikaans.

Surname and initials:

Student number:

Individual submission: Contact session:

Topic(s):

Name of my organisation:

Pseudonym to be used if discussed in class:

Nature of business:

Brief (one paragraph) description of the scope of the business that I analyse:

By submitting this on eFundi, I declare that this submission is my own work

Page 1: This submission covers the previous two contact sessions (A and B): Theory of contact A has been submitted during the previous contact session. Summary of the theory (contact session B). (Only one page per chapter!!!)

-

What is there about the topic that I would like explained further in class?

-

Page 2: Nature of business:

Contact session 3: How this theory is applied in the organisation at present

Page 3: Contact session 3: Proposals on improvement of this element of the organisation's operations

Page 4: Diagrams (if needed: Feel free to move them to the relevant place on the previous pages, but do not exceed the total page limitation!)

Example of submission (only theory pages required)

Use this first page for all your submissions. Only change the part in italics between submissions. Feel free to submit in Afrikaans.

Surname and initials:

Student number:

Individual submission: Contact session:

Topic(s):

Name of my organisation:

Pseudonym to be used if discussed in class:

Nature of business:

Brief (one paragraph) description of the scope of the business that I analyse:

By submitting this on eFundi, I declare that this submission is my own work

Page 1: This submission covers the previous two contact sessions (A and B): Theory of contact A has been submitted during the previous contact session. Summary of the theory (contact session B). (Only one page per chapter!!!)

-

What is there about the topic that I would like explained further in class?

Attachment 8. Community project checklists

Checklist 1: Do we have a viable project? (We, the need and the organisation)

- 1 Is there an organisation with an explicit need?
- 2 Is their need in line with what we can offer?
- 3 Does the organisation have a business venture?
- 4 Are they keen to accommodate us at least for the semester?
- 5 Would we have at least some skills by the time we really get involved to make a difference?
- 6 Would we be able to transfer skills to the organisation?
- 7 Can we at least put some system in place that they need and that they do not have at present?
- 8 Do we have a primary point of entry at the organisation? (your primary client)
- 9 I
- 10 Will the project develop at least one skill for each team member?
- 11 Does it excite you all?
- 12 Have all your responses been "yes"?

We have a viable project!

Checklist 2: Is the project a guaranteed success?

- 1 Is there a committed champion in the team?
- 2 Is everyone in the team aware what his/her specific role is in the project?
- 3 Have they completed the registration and indemnity documents?
- 4 Is the organisation willing to give feedback to the group/lecturer during and after the project?
- 5 Have you diarised review meetings with the organisation before each contact session?
- 6 Have you arranged a high impact award and celebration for the team and any others who contributed?
- 7 Is there a symbol and title for the project?
- 8 Have we considered all the ethical considerations?
- 9 Is everyone prepared to do a presentation of what they discover and learn?
- 10 Would you be able to write an article about the project that would benefit both the organisation and the NWU?
- 11 Have all your responses been "yes"?

Our project is a guaranteed success!

Checklist 3: It the project sustainable? (At the end of the project)

- 1 Have we documented all the learning points for the organisation?
- 2 Can we prove that we have transferred some skills/systems to the organisation that can continue for the next semester?
- 3 Is there someone in the group willing to mentor the organisation further upon request (even over the phone)?
- 4 Do we have a sustainability plan for the organisation?
- 5 Does the organisation have a sustainability champion who will carry the flag for the project?
- 6 Did the project change at least one team member's heart?
- 7 Would they be able to continue the effort for at least six months without us?
- 8 Do we have our photo/video journal and testimonial?
- 9 Have we considered all the necessary ethical considerations?
- 10 Have all your responses been "yes"?

Our project is sustainable!

Attachment 9. Cover letter for individual assignment

Written on official letterhead with
contact details included

Date

To whom it may concern

Dear Sir/Madam,

The bearer of this letter is an MBA student in my Operations Management class. My teaching approach is to apply the theory to the organisation where they are employed (or in cases where that is not possible, an organisation of their choice) rather than just relying on cases studies for practical implementation.

During the semester the student will be required to do an investigation in the organisation on each of the topics covered in the module and to propose improvements in terms of each of these topics based on the theory. The benefit to you as an organisation is that the student will critically look at opportunities in the organisation and that he or she should become more valuable to the organisation as a result. In the class I shall use selected cases (only revealing the name of the company if the student, on your behalf, specifically gives permission to share the name) as a class discussion. This will provide you with the additional benefit of free additional inputs from a clued-up panel of "consultants".

At the end of the semester the student will be required to submit a portfolio of evidence that he or she can apply the theory in the organisation. In this portfolio he or she must inter alia supply proof from you that he/she has shared the learning points with you. If permitted, he/she must also provide proof of implementation of these principles through a photo journal. From past experience

I can vouch for students' good judgement in this regard. My copies of these portfolios will be locked away after the semester for a period of three years.

From my side I undertake to maintain confidentiality by committing to the following:

- Not to share sensitive information with anybody, should you indicate information as sensitive;
- To use moderators with the same level of ethical commitment;
- To only refer to the company by a pseudonym, should you request this; and
- Never to publish any facts about your operation without your permission.

Should you want anonymity, please indicate as such below, keep the original letter and send me a copy via the student, or email me at the above address. You could contact me, should you have any questions or queries.

Regards,



Johan Jordaan

Lecturer, Operations Management

NWU School of Business and Governance

Student name:

Student number.....

I would prefer not to use the company name in reports for competitive reasons **(Y / N)**.

Signed:

Designation:

Themes covered in this module

- Operations and productivity
- The global environment and operations strategy
- Managing projects
- Forecasting demand
- Product design
- Quality management
- Process design
- Location decisions
- Layout decisions
- Job design and work measurement
- Supply chain management
- Managing inventory
- Planning and Scheduling
- MRP and ERP systems
- Lean operations
- Maintenance and reliability

Regards,

Johan Jordaan

Lecturer: Operations Management

Attachment 10. **Community project cover letter and registration form**

Written on official letterhead with
contact details included

Date

Letter to prospective community partners

Dear

Thank you for your willingness to take part in the 2018 North West University (NWU) School of Business and Governance (Business School) Operations Management community project. This letter is to explain the motivation behind the project, what we offer during the course, what we would like to get in return and the value that we plan to bring to you.

The students that are involved in this project are practicing managers who are busy completing their MBA part-time through the business school. The module that they are presently busy with is Operations Management. A list of the topics covered in Operations Management is attached to this letter for your information. The students' expertise varies from being practicing operations managers to people who have never heard about operations management. Students are organised in study groups ranging from 5 to 8 members.

The motivation behind the project is fourfold. First, in terms of the learning of the students it gives them the opportunity to apply their knowledge of the subject in real-life situations where all of the group members are more or less on the same level. Second, it allows the students to make a real difference where it is needed and in organisations that do not compete with their primary employer. Third, it is in line with the goal of the NWU and the Business School to make a relevant (and hopefully sustainable) difference to the community. Lastly we hope that it speaks to the social conscience of the students.

I have selected a number of community organisations, all of which share the following characteristics:

- Situated in the geographical area where the study group resides;

- Operating some kind of production venture in parallel to the community work being carried out;
- That indicated a willingness to use this opportunity to get some management skills to help manage and optimise their operation; and
- That are willing to honestly share their experience of the input that they received with the students and myself.

What can you expect of us? The students will make contact with you regularly during the semester and assist you with free advice about operations issues that are unique to your organisation. Every fortnight they will visit you and supply you with a short presentation on one or two topics where you will be given advice on how you could apply this in your organisation. Whether you apply this advice is your choice, but the idea is that you and the students form a partnership where they apply their knowledge and you share your knowledge of practice with them. Personally I would like the students to roll up their sleeves and make a sustainable difference to your organisation. I am looking forward to your feedback.

Our experience is that this project makes a wonderful difference to the students' personal growth. It is therefore not only you that will benefit from the project, but also the students. What do we expect of you? First we need a primary contact person in your organisation to liaise with. We need you to give the students some of your time to really engage with your organisation, to get to know your organisation, to share your issues with them and to give them honest feedback on the difference that they make and on the challenges that you experience. Also, I as lecturer would like the opportunity to make contact with you during and after the project to get your honest feedback on the success, the value and the sustainability of the project. This could either be physical visits, phone calls or questionnaires. This information will be used to better plan future projects to ensure that we constantly improve our output. Should you prefer, we could even carry on with your project in 2019 and beyond (probably with a new study group). I would also like to publish some or all of the case studies, which would give your organisation some visibility in either the popular press or the academic fraternity or both.

Should you have any problem with the group, I invite you to contact me at any time.

What we do request is the following:

- Once a group of students engage with you, you allow them to at least complete their involvement for the duration of the semester.
- During the first contact session on 10 February 2018 (Potchefstroom, at 08:00, in Afrikaans) or 12 February (Vanderbijlpark, at 16:00, in English), I shall host a workshop to explain which value we want to bring to the table and to help you to manage your relationship with the students. Please send a representative of the

organisation to attend the session (or as many as you want to send!) The students will pick you up and drop you off again afterwards.

- At the end of the project the students present to the class on the project, what they have learnt and what difference they have made. It would be wonderful if you could attend this session too. It takes place on 5 May 2018 (10:00, Potchefstroom, in Afrikaans) or 7 May 2018 (18:00, Vanderbijlpark, in English). The students will pick you up and drop you off again afterwards.

What value could you expect from us? I cannot guarantee that the students that will be engaged with your organisation will move mountains. What I can guarantee is that you will get some inputs from some professional managers and that you will get the perspective of a team of "outsiders", and we hope that they will not remain outsiders. During the pilot run that we had in 2014, we found that some of the groups remained involved with the community organisations well beyond the duration of the semester.

My experience since the start of this project is that the biggest drawback for you is that the students are basically involved for a period of four months and then usually move on.

If you can supply me with your information on the attached form, I shall put your organisation on my list for next year. I cannot guarantee that we will get involved, since the demand for help is always larger than the supply and in the end it is the prerogative of the students, but I shall keep you up to date.



Johan Jordaan

Lecturer: Operations Management

Cell: 066 216 0354

Themes covered in this module

Operations and productivity?
The global environment and operations strategy
Managing projects
Forecasting demand
Product design
Quality management
Process design

Location decisions
 Layout decisions
 Job design and work measurement
 Supply chain management
 Managing inventory
 Planning and Scheduling
 MRP and ERP systems
 Lean operations
 Maintenance and reliability

Community project registration form

Name of organisation	
Physical address	
Postal address	
Email address	
Phone number (office hours)	
Phone number (after hours)	
Contact person (primary liaison with study group).	

Position in organisation	
Cell number (voluntary)	
Description of community work done by organisation	
Description of business operation done by organisation	
Number of people benefitting from community work	

Attachment 11. Rubrics for assessment

Individual submission (long and short format: Short format submissions only get the first mark out of 10)

Criteria for marking individual assignment for two selected contact sessions (long submissions)	
1	Content
1.1	Summary of theory: (10)
1.2	Application in your organisation (30)
1.3	Suggestions for improvement (30)
2	Insight (10)
3	Layout and technical aspects (10)
4	Marker's general impression (10)

Group submission (community project)

Criteria for marking group assignment (MBA)	
1 (30%)	Marking of 3-slide PowerPoint shows handed in during every contact session. This includes:
1.1	Understanding of how the underlying theory is applied at the community organisation
1.2	Practical proposals to the community organisation
2 (30%)	The final report handed in during contact 8. Marks are awarded for:
2.1	Operations principles used
2.2	The difference made to the community organisation
3 (30%)	Peer rating of presentation during final contact session. Marks are awarded for:
3.1	Operations principles used (as per their need)
3.2	Difference made (including sustainability)
3.3	The difference that the project made to you as a group
4 (10%)	General quality

Attachment 12. **Template for final reflective log**

The **page guideline** is one page, but if you would like to write more, feel free to do so. You do **not** need to give me your name or student number.

Your unique code:

	<i>First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name</i>

Briefing: Please supply a one-page **reflection** of your learning and personal development that you have experienced over this semester. Please feel free to be brutally honest! You could include ANYTHING in here. Remember, this is a reflection, which I shall use to improve the module for future groups, and what you write in this reflection would not affect your performance in this module or in the rest of your MBA study at all. If you received no benefit, feel free to say this as well. If you do not want to supply a reflection report, you are welcome to withdraw at any time without consequence.

Start typing here:

Attachment 13. Excerpt from answers from reflective log (Project management and forecasting)

Contact 1: Forecasting and project management: What is the most important thing you have learnt?

Forecasting - The importance of having clearly outlined goals. Quantitative & qualitative aspects of forecasting

The most important thing I have learned during this contact is the importance of planning on project management

Before the contact session: I have learned to acknowledge the work that my manager do i.e. forecasting. As a junior employee I don't get a chance to do this and it feels like it's not done. This topic made me think about team planning.

The essence of project management. The link between project management and strategic management. And forecasting qualitative and quantitative

Importance of project management and forecasting. Because environment constantly changes, but these two components' impact may not be underestimated. Project management must be understood from the organisation's management and values, and they impact the human element of the success of the project.

That qualitative and quantitative forecasting are dependent on each other.

Contact 1 Forecasting and project management: What is there that you still don't understand?

Need to familiarise with the new jargon. Would like to learn more about project management.

Everything is clear about the topics, I just need to get more material on this topics and read for myself.

Using the systems for project management.

The implementation face of project management

Study and do 3-pager.

How to react when the forecast fails

I think I have a good idea. If the theory is applied in practice, I could have some more questions.

I'm not comfortable with the calculations, but it's all good if we didn't have to use it, but just know about it.

Some of the methods on how to implement them

How does one get the "buy-in" from all stakeholders when it comes to project management & forecasting. E.g. people in the project need to take ownership to obtain success.

How was your experience with the method of presentation (Slides before, applications and further clarification during class)?

Good class discussions and inputs from colleagues.

Excellent, the facilitator is making things very easy for everyone.

Perfect!!! We learn by repeating and I don't think I'll ever forget the work.

It was a good experience

It was excellent and engaging in groups.

Very good. Easy for me to prepare for class. Effortless studying & comprehensive.

Very interesting

Excellent. Very interactive and informative.

Could conduct good discussions because all were aware of theory.

It makes class discussions easier, because the students already have the knowledge and could address problem areas.

In many cases this week was your first experience in your study group. What lessons did you learn about teamwork skills?

The important to discuss and share ideas

The success of my organisation is based on the successful team work.

I have learned that we are all different individuals and have different ways of tackling issues but however we must compromise to reach our goal.

With team work you are able to do more, there will always be those that dominate conversations

It assisted me to understand everything clearly.

Well-coordinated, built a relationship during the summer school. So, easy for us to go forward.

Everybody must be honest. Everybody must honest. Must support each other.

Teamwork is through and through about communication, building trust. We must keep up communication.

Still too early for valuable feedback

It is important to be able to identify others' strengths and weaknesses to be able to handle risks better.

Our group is diverse but yet share some values and able to work well as a group

What (if anything) will you do differently to let the team function even better?

Ensure forecasting and preparation also that there needs to be a timeous delivery

Make everyone participate.

Reduce the distance.

Participate more add more to discussions and prepare better

Improve the quality of groups.

At this stage, not much. Maybe avoid less chats on WhatsApp, but more on work.

Be committed and honour all objectives

More social and comfortable discussions to soften the mood and to ensure that all does not only is about work

We will have to communicate more.

Perhaps a quick team building action during the summer school (not just the braai), a practical activity to be able to see how your team members operate under pressure.

*What do you perceive to be the biggest gaps **in your makeup** to successfully complete this semester?*

Time management

Well, Time is not on my side. Too many responsibilities.

Being vocal, expressing myself comfortably around others.

It might be geographical location to complete the assignments

I am not fully registered and depend on Group to get dates

Where my reading and comprehensive skill improved. Be able to apply these methods at my workplace.

Not sure if any yet.

Time.

Sufficient time to do extra research. I do not only want to complete the course, but read as much as possible wider than just the necessary.

Self-discipline

How will you use the individual and group projects to address these gaps in your makeup?

Manage the time better.

Learn from others how they cope and juggle around everything.

It will help improve my skills of expressing myself around others (my group), be able to participate in class and also give feedback to the rest of the class and to my organisation.

Dedicate more time to group & individual assignment be better prepared

By participating in the group activity and do all my assignment properly and ask questions.

Ask for help, preparations for exams. Ask questions on WhatsApp. Share information via email & WhatsApp.

Get to know each other's strengths and weaknesses, and use these to the group's advantage.

Set up and follow work schedule.

Attachment 14. Briefing for final individual portfolio of evidence

Your final examination is replaced by a portfolio of evidence of the learning that took place. This portfolio will be in a form of a management report to the management of the organisation.

Operations Management: Format for MBA operations management portfolio

Introduction: *The essence of the portfolio is not only to compile your weekly submissions into one single documents, but to use the information acquired through the semester to propose a **strategic operations management plan** to the organisation that you have analysed through the semester. Note: you are not required to suggest a new company strategy (Vision, Mission, etc.) for the company, but a “way forward” for operations in the company. It could have an influence on the overall company strategy, though.*

Performance levels:

Pass/fail criteria: A student will fail the “examination” if his/her portfolio

- is simply a compilation of the seven weekly submissions; or*
- does not address the strategic direction in which operations in the organisation is going.*

A student will pass the portfolio if he or she can prove to the examiner that he or she

- understands the theoretical background;*
- has a practical grasp on the concepts covered in the syllabus;*
- has critically analysed the company's present operations;*
- can present the information in a way that can shed light on the strategic direction that the company should go in terms of their operations;*

In summary, if a student can compile a strategic operations management plan that critiques the present management of operations in the company and suggests changes and/or opportunities for optimisation, he or she should pass. Note: If the present strategy that you have analysed is good in your opinion, you should defend it based on Operations Management theory. It is not required that you understand the strategic process in the organisation... this is covered in your final year. What is required is that you understand where operations fits into the strategy (we have covered that in Contact 0 during the study school) and the changes that could be made on functional level to the present strategy to improve operations.

Distinction criterion: A student will receive a distinction for the portfolio if he or she can convince the examiner that he or she has a thorough level of strategic insight to such an extent that he or she can present the operations strategy to a company's board of directors and blow their minds!

Moderators' input: Ten percent of the portfolios will be randomly selected and distributed to internal and external moderators to be moderated. The moderator will NOT know the original mark awarded by the examiner. This is necessary to ensure that the performance level of the Operations Management module is on par with that of other MBA modules and that we still comply with the performance levels prescribed by AMBA.

The same level of confidentiality that was assured when the project was started at the start of the semester will be guaranteed by the examiner and all the moderators.

Supplementary examination:

Final marks will be on eFundi seven working days after the final submission date as stated in the study guide. The same fail/pass/sub-minimum criteria that apply to examinations, also apply for the portfolio. Students failing the portfolio will be required to re-submit their portfolios before the date supplied in the study guide for the supplementary examination, provided they achieve the necessary subminimum required for a supplementary examination. The normal examination commission rules apply.

Technical requirements

The length of the portfolio body is set out below. Executive summary, table of contents and attachments are not included in this limitation. In terms of structure it is required that you include the following:

- **An executive summary;**
- **A table of contents;**
- **An introduction**, describing (especially to the moderators) the nature of the company/department/business/office/plant that you are discussing (one page maximum).
- **Strategy:** You should briefly describe the stated **strategic direction/goals** in which the company is going at present (strategic goals), as provided by the executive management of the company/department (one page maximum). You have covered this for contact 1.
- You should also include an analysis of whether the present operations (all the elements that we have covered in class) would let the company **reach this strategic goal** (maximum 5 pages) and, based on this analysis and the theory, propose changes (maximum 5 pages) that will take the company towards this strategic goal.
- **A conclusion** at the end.

- A **testimonial/declaration** from the organisation that you have actually shared the report with them. Should there be any photos that you would like to include (evidence of changes actually made and their effects), they can be included below.
- A **reflection** of what you have learned about operations management during the semester (both individual and group projects) and how it influenced your understanding of operations management and your outlook on the world. Feel free to be honest! You could include ANYTHING in here. Remember, this is a reflection, which I shall use to improve the module for future groups. This is done on a separate document, as indicated in eFundi.
- **References and acknowledgements** (I do not require referencing, but if you do quote sources, use the Harvard Referencing style available on the NWU library website..)
- All six your submissions for the contact sessions must be included as **attachments**.
- Save your entire document as **ONE SINGLE pdf** file (use "Save As" in MSWord) and submit the pdf.

NOTE: This portfolio will be marked very strictly, as it is benchmarked against the examination papers for other subjects. Ten per cent of the portfolios will be moderated and all portfolios will be locked up in a store room for at least three years. The level of confidentiality that your employer requires is therefore guaranteed, both by the lecturer and the moderators.

Font: Arial 12 pt. Page size: A4. Margins 2.5.

Final submission date: Monday, 21 May 2018 (contact 8) at 16:00 for both the hard copy and the electronic copy (Potchefstroom and Vaal groups) and Monday, 4 June 2018 (Mafikeng group). I need both a copy on eFundi (in pdf format) as well as a hard copy, handed in at the business school office in Potchefstroom, Vaal or Mafikeng. **NO LATE SUBMISSIONS WILL BE ACCEPTED!** Do not blame Eskom or the NWU network for late submission: You have ample time to submit before d-date!

For the portfolio, marks will be given for the following:

- Mastering of the theory;
- Insight;
- The ability to apply the theory strategically;
- Technical quality; and
- An impression mark about the value of the portfolio to the organisation.

Criteria for marking individual final portfolio of evidence	
1	Content (50)
1.1	Did the candidate convince me that he or she has a thorough understanding of the theory?
1.2	Did the candidate convince me that he/she can practically apply the theory in an organisation?
1.3	Are the identified opportunities for improvement realistic within the constraints of an actual organisation?
2	Insight: Did the candidate convince me that he/she has a genuine insight into the application of the theory and how operations management strategically fits into the rest of the organisation? (20)
3	Layout and technical aspects (10)
4	Marker's general impression (10)
5	Value added: Did the candidate convince me that he/she can add value to the company through application of this knowledge? (10)

Attachment 15. **Example of reflective logs: Block release sessions**

Feedback form, Contact 2

Your unique six-letter code

	First and last letters of: Birthplace, Mom's Maiden Name, Dad's first name

1 *Think of a problem that you have solved lately (either in your work environment, your private life or while suggesting changes to be made in your individual assignment). List the steps that you actually followed when solving this problem.*

.....

2 *There is a major overlap between the typical problem-solving steps and the steps involved in new product development, as discussed in today's lesson. Do you think that this will have any effect on how you plan to solve any future problems? Explain.*

.....

3 *Actually, the steps for decision-making are also almost identical to those of problem solving. Reflect on your decision-making process and on its success: Would it benefit you to use a more structured approach? Explain.*

.....

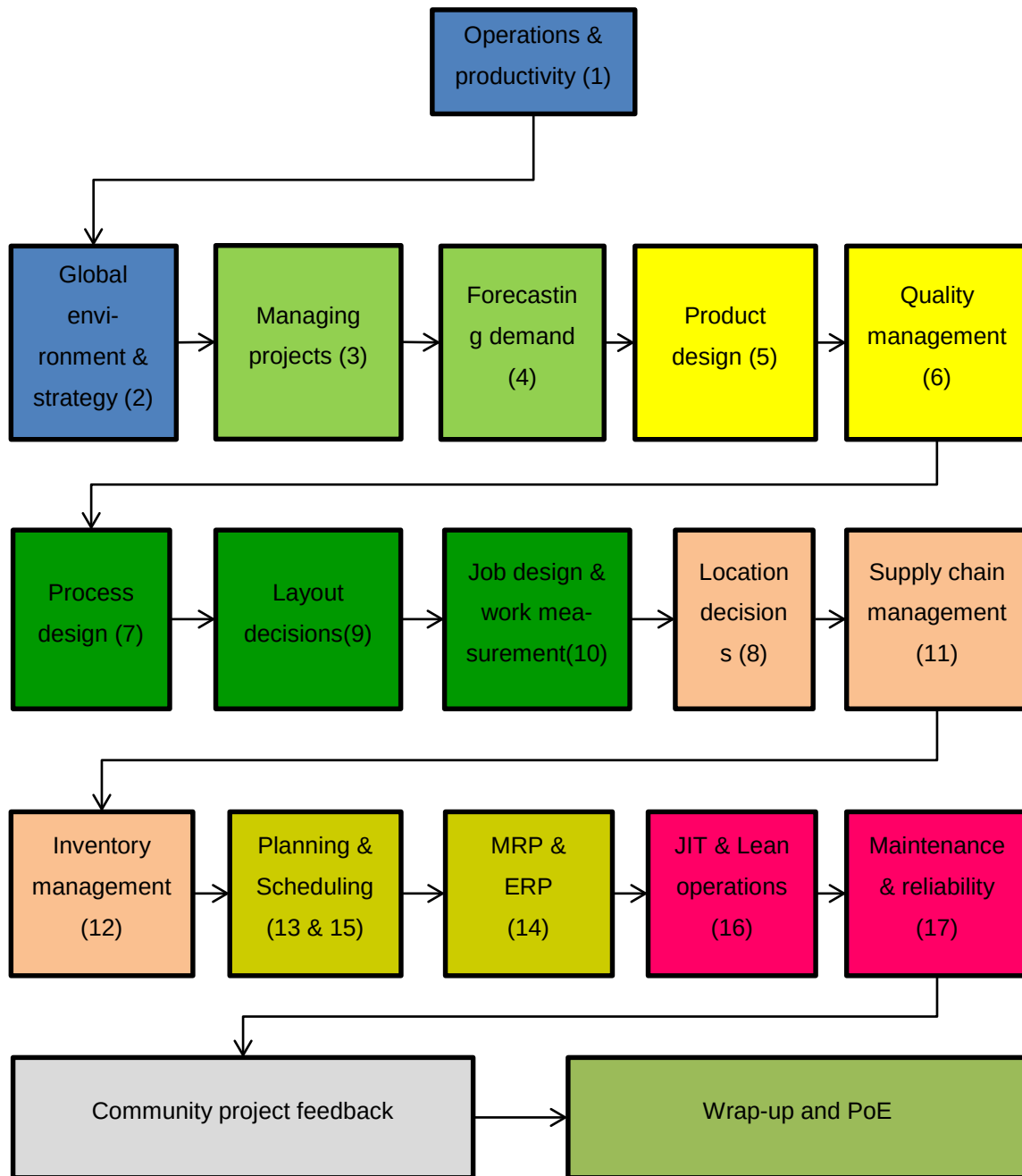
4 *Is there anything else that you are already doing differently since starting this module?*

.....

Your brutally honest feedback is appreciated!

Johan Jordaan

Attachment 16. Roadmap given on LMS



Attachment 17. Excerpt from markbook

Example of individual assignment markbook

	Calculation: Individual assignment portion of participation mark	Max	Average	Student #	Student #	Student #	Student #
1.1	Summary of theory. (Did he/she capture the essence?)	10	6.2	8	8	7	7
1.2	Application in own organisation	30	20.1		22		
1.3	Suggestions	30	18.9		21		
1.4	Insight on the topic is displayed	10	6.8		8		
1.5	Technical excellence	10	7.0		8		
1.6	General impression	10	6.8		7		
	Total: Contact 1 (Projects, forecasting)	100	26.0	8	74	7	7
2.1	Summary of theory. (Did he or she capture the essence?)	10	6.9	7	8	8	7
2.2	Application in own organisation	30	20.9				
2.3	Suggestions	30	19.7				
2.4	Insight on the topic is displayed	10	6.8				
2.5	Technical excellence	10	7.0				
2.6	General impression	10	6.9				
	Total: Contact 2 (Product design & Quality)	100	44.7	7	8	8	7
3.1	Summary of theory. (Did he/she capture the essence?)	10	7.4	7	8	8	8
3.2	Application in own organisation	30	21.1	23			23
3.3	Suggestions	30	19.7	23			21

3.4	Insight on the topic is displayed	10	6.7	8			7
3.5	Technical excellence	10	7.2	7			7
3.6	General impression	10	7.0	7			7
	Total: Contact 3 (Processes, Layout & People)	100	41.8	75	8	8	73
4.1	Summary of theory. (Did he/she capture the essence?)	10	7.7	8	8	8	8
4.2	Application in own organisation	30	22.3				24
4.3	Suggestions	30	20.6				21
4.4	Insight on the topic is displayed	10	7.1				7
4.5	Technical excellence	10	7.2				8
4.6	General impression	10	7.1				7
	Total: Contact 4 (Location, SCM, Inventory)	100	42.0	8	8	8	75
5.1	Summary of theory. (Did he/she capture the essence?)	10	7.7	9	8	8	8
5.2	Application in own organisation	30	22.1			24	
5.3	Suggestions	30	19.4			23	
5.4	Insight on the topic is displayed	10	6.8			8	
5.5	Technical excellence	10	7.1			8	
5.6	General impression	10	7.0			8	
	Total: Contact 5 (Planning, scheduling, ERP)	100	34.5	9	8	79	8
6.1	Summary of theory. (Did he/she capture the essence?)	10	7.8	9	8	8	8
6.2	Application in own organisation	30	21.9	25	24	23	
6.3	Suggestions	30	20.6	25	25	21	
6.4	Insight on the topic is displayed	10	7.0	8	8	7	
6.5	Technical excellence	10	7.3	9	8	8	
6.6	General impression	10	7.1	9	8	7	
	Total: Contact 6 (Lean, maintenance & reliability)	100	38.8	85	81	74	8

Example of group assignment markbook

	Group name	Maximum	Average	Group name # 1	Group name # 2	Group name # 3	Group name # 4	Group name # 5	Group name # 6
				Community organisation #1	Community organisation #2	Community organisation #3	Community organisation #4	Community organisation #5	Community organisation #6
SSa	Completed forms from organisation	5	#DIV/0!						
	Total	5	0.0	0	0	0	0	0	0
1a	Introducing the organisation	10	10.0	10	10	10	10	10	10
1b	Conform to requirements	10	8.3	6	10	10	6	6	10
1c	General impression	10	9.2	8	10	10	8	8	10
	Total	30	27.5	24	30	30	24	24	30

2a	Do they explain the theory well to the organisation?	10	7.3	6	7	8		8	7
b	Did they identify the real issues at the organisation?	10	7.5	7	6	8		8	8
c	Are the proposals based on the theory?	10	7.0	7	6	7		6	8
d	Is it practically implementable?	10	6.9	6	6	6		7	8
e	General impression	10	6.9	7	6	7		7	7
	Total	50	32.9	33	31	36	0	36	38
3a	Do they explain the theory well to the organisation?	10	7.0						
b	Did they identify the real issues at the organisation?	10	8.0						
c	Are the proposals based on the theory?	10	8.0						
d	Is it practically implementable?	10	7.0						
e	General impression	10	7.0						
	Total	50	2.8	0	0	0	0	0	0

Example of final individual portfolio of evidence markbook

	Student #1	Student #2	Student #3	Student #4	Student #5	Student #6	Student #7	Student #8
Content (50)								
<i>Did the candidate convince me that he/she has a thorough understanding of the theory? (15)</i>								
<i>Did the candidate convince me that he/she can practically apply the theory in an organisation? (15)</i>								
<i>Are the identified opportunities for improvement realistic within the constraints of an actual organisation for implementing the strategy? (20)</i>								
Insight: Did the candidate convince me that he/she has a genuine insight into the application of the theory and how operations management strategically fits into the rest of the organisation? Does this support the strategy?(20)								
Layout and technical aspects (10)								
Marker's general impression (10)								
Value added: Did the candidate convince me that he/she can add value to the company through application of this knowledge? (10)								
Total								

Attachment 18. Example of facilitator manuals

Facilitator manual: Operations Management: Contact 6					
Time	Activity	Needed	Don't forget	Duration	Slide
Before	Review forms to panel Load slides Test technology Place reflection forms Cordon of back of class	Print 2 forms Slide show Videos, sound Forms Tape and Presstik	Backup speaker system Enough forms		
07:45	Open	Bible		5 minutes	
07:50	Admin	Next week's presentations Final individual mark Deadline Dropbox.com	Migrating groups? Dry runs. Questions? Deadline for slides?	5 minutes	Slide 2
07:52	Introduction, outcomes and context	Red shirt		2 minutes	Slide 3&4
07:55	Feedback community	Potch 1	Microphone? Ask Martin before	10 minutes	Slide 5-8
08:05	Lean theory			20 minutes	Slide 9-15
08:15	Problems raised by you			10 minutes	Slide 16-17
08:35	Rhyme competition	Sound system	Check for completeness	15 minutes	Slide 18-23
08:50	Biological break		Warn them about exercise	10 minutes	Slide 24
09:00	Tennis ball exercise	3 balls, 7 players	1 or 2 per group	10 minutes	Slide 26
09:00	Maintenance theory			20 minutes	Slide 27-36
09:20	Group discussion: Essence of maintenance	Capture on board	Chalk	10 minutes	Slide 41
09:30	The race			5 minutes	Slide 42-55
09:35	Reflection and next week	Questions	Reflection forms	5 minutes	Slide 56

Attachment 19. Rubric: Problem solving exercise

D Problem solving steps	Correct answer
Count number correct	Blue 2
Give 1 for each answer in the correct order after previous correct answer	Orange 4
	Green 3
	Red 1
	Purple 3

E1 Problems identified	Score	Correct answers
<i>Number correct</i>		Obvious: Animal locked in
None	1	Other: Key gone
One obvious	2	Other: Break in
Obvious plus one	3	Other: Not your job
Obvious plus two	4	Other: No spare key
All problems	5	Other: Mess
		Any other good one mentioned

E2 Problems identified	Score	Correct answers
<i>Number correct</i>		Animal locked in
None	1	
ID Wrong not explained	2	
ID Wrong explained	3	
ID but not explained	4	
ID correct, explained	5	

E3 Problem statement	Score	Correct answers
<i>Number correct</i>		Find suitable way to free animal
None	1	
Attempted, but clumsy	2	
ID Wrong explained	3	
ID but not explained	4	
Acceptable, relates to problem	5	

E4 Possible alternatives given	Score	Correct answers
<i>Number correct</i>		Call locksmith
None	1	Break window
One alternative given	2	Break door
One alternative given, + / - given	3	Call manager
Many given, + / - given	4	Call police/experts
Many given, + / - given and explained	5	Any other plausible alternative

E5 Select best alternative	Score	Correct answers
<i>Number correct</i>		Correct answers
No answer	1	Choose best of answers supplied in E4
Alternative given, no relation to problem	2	

Most important alt given, not motivated	3	
Most important given, not explained well	4	
Most important given, well explained	5	

E6 Implement solution		Correct answers
<i>Number correct</i>	<i>Score</i>	Logical implementation of answer to E5
No answer	1	
Explained, not related to problem	2	
Explained, related to problem, no implications	3	
Explained, related to problem, wrong implications	4	
Explained, related to problem, implications	5	

F1 Creative problem solving		Correct answers (needle)
<i>Number correct</i>	<i>Score</i>	Float in water
No alternatives	1	Magnet
One alternative	2	Fire
Two alternatives	3	Search
More than two alternatives	4	Animals eat straw
More than two alternatives, choose best	5	Any other plausible alternative

Attachment 20. **Quotations to substantiate qualitative findings**

Quotations by participants act as evidence of the identified themes and of the relationship between concepts within the themes. The number of quotations available to provide proof of certain relationships depend on a number of factors: In some cases, the link is so strong that a major proportion of participants refer to the link. In some cases, the number of quotations is smaller, but the quotation is part of a larger reflection and the evidence from this bigger picture is so compelling that the quotation speaks of a broader context.

In the case where there is a large number of quotations proving a certain point, the number of quotations used here is limited to those two to five quotations that best prove the point. In many cases the same quotation refers to more than one issue, and will therefore be used more than once to prove more than one different point. Where information embedded in the quote is irrelevant to the point being proven, it is omitted and the omission is indicated by "...". Where a concept is inferred in the surrounding text, it is given in brackets (and not in italics).

Very few of the *participants* are native English speakers, and therefore not all reflection reports were written in good English. Quotations that are originally in another language have been translated into English and indicated as such. Obvious spelling and grammatical errors have been corrected. The decision to "clean up the data" before publishing it was taken to show respect to participants. In all cases such changes were made without changing the meaning of the quotation. Where the name of the community organisation, employer or lecturer is mentioned, it was anonymised by replacing it with "(name of community organisation)", "name of employer" and "name of lecturer" respectively (without italics).

In this attachment the quotations are sorted by the theme that is being proven, and subdivided into specific links between codes (or elements of the constructs being investigated) to delve into the real mechanisms involved in the strategy for engaged learning.

Where the author could not be identified, the quotation is indicated with "ANON". No number is given to these anonymous participants, as it cannot be ascertained whether some of these anonymous quotations are from the participant or not, and therefore it would be unscientific to possibly give the same participant two or more numbers.

20.1 Quotations on general theme 1: Link between engaged learning and subject-related learning

20.1.1 Quotations on learning that took place

KPHNCT *"The aim of the class was to teach us how to use operations in an organisation as a competitive advantage and not as a burden. Every concept we have covered is important for successful management ... It enriched my knowledge and made me think and act differently towards my personal life and in the workplace. I looked at all aspects with an 'operational' eye, applying the different principles in all I do. I have a better understanding of why some things work and others not."*

ERBRGD *"I gained a lot of knowledge and I can apply it accordingly... The flipped classroom approach is fantastic. I feel that all the MBA subjects should be presented in this way..."*

20.1.2 Quotations on understanding the broader context

DEMUJB *"Going through the module has provided me with an inclusive knowledge related to operations management... The module additionally improved my thoughtfulness on the connections amongst the organisation's functions, and how they come together (in a value chain) in contributing to the success of an institution and the achievement of the organisational goals."*

PAANST *"I believe that the subject itself has really allowed me to understand how to see a bigger picture and how to draw links between elements in an operational environment, not only in our day-to-day operations, but in my life as well."*

20.1.3 Quotations on the link between the workplace engagement project and learning

Participants also refer to the workplace engagement project as the "individual project" or "individual assignment". It pertains to work-integrated learning (WIL).

BAVEGN *"I must admit that initially (the workplace project) was time-consuming but at the end I concluded that it was worthwhile and by far the best way to learn a subject."*

PAVRGT *"The two-weekly preparation and individual assignment before every class (on the workplace project) are very helpful and by only focussing on the areas where more understanding is required during class, it is very insightful."*

20.1.4 Quotations on the link between the community engagement project and learning

Participants also refer to the community engagement project as the “group project”, “group assignment” or the “community project”. It relates to the service-learning project.

VPPEJH *“Working with the community project with my group has also enhanced ... my understanding of processes in my working environment in terms of involvement, optimal usage of resources, re-evaluating current structures, teamwork and waste reduction.”*

ESBRNO *“I also gained a great deal of knowledge from the group project, not just from the subject or the NPO, but also from the people, the group members: people who give willingly live fuller lives, as you ensure the growth of others in the process. I appreciate all the skills and knowledge I gained from and through our group members.”*

20.1.5 Quotations on the link between classroom engagement activities and learning

SGLSLS *“I enjoyed all the activities and the manner in which this course was presented and although it was fun, it definitely added to my knowledge and not just to “know” but also understanding in where it can be applied.”*

ESBRNO *“Class also made understanding the literature easier, but I also find that the pre-class investigation into the literature made for better class discussions. Class activities aided in the understanding of complex elements.”*

VGHNHS *“The class experience was a learning experience. Practical application definitely ensured to combine the application of the different theories in the workplace. The compiling of flow diagrams, project time lines and other operations resources now form an integral part of my management framework.”* (Translated into English)

20.1.6 Quotations on understanding, application of knowledge and deep learning

STMEJH *“Doing assignments assisted in enhancing my grasp of the theories and entire content. It gave me an opportunity to interact with my work without an extra effort, and was a sort of unconscious process of digging deeper for knowledge.”*

PMDTPT *"Students are equipped with tools to apply to their surroundings in order to achieve objectives. It exposes the student to business ideas and concepts in order to identify issues in an operations management environment."*

20.2 Quotations on general theme 2: Link between engaged learning and generic skills

There is one quotation that specifically refers to the effect of the total intervention on generic skills. Other quotations are more specific and refer to individual elements of the engaged learning strategy or to individual generic skills.

20.2.1 Quotation on the link between engagement elements and general generic skills

MGMEBL *"The Operations Management module this semester has helped me to identify and to improve on the soft skills that contributed to my personal development and to also to work with a team. The soft skills that are critical and that the reflection is based on are communication, teamwork, leadership, problem-solving, decision making, self-management, critical thinking, cultural awareness and motivation skills."*

20.2.2 Quotations on the link between the workplace engagement project and general generic skills

ANON *"I have not just learnt theory of operations management, but also learned soft skills that I can not only use in my workplace but in my everyday relationships."*

ANON *"My soft skills are better now, thanks to..."*

20.3 Quotations on general theme 3: Link between engaged learning and impact of engaged learning

20.3.1 Quotations on the link between the community engagement project and attitudinal benefits for participants

CEVNPR *"The NPO group assignment taught me gratitude. To see the joy on the (nickname of the community organisation beneficiaries) faces about receiving even the silliest thing, I have a lot to be grateful for. I can study and work and make a difference in the lives of the people around me."* (Attitudinal benefit: Gratefulness).

KKGREC *"The community project was a major eye opener for me to see that there are still many people that want to assist people in need. I saw that great things can be achieved by bringing people together. I am very proud of what my group achieved at (name of community organisation). This ensures a long lasting relationship."* (Attitudinal benefits: Community orientation and Respect for community organisation).

KPLXCD *"My commitment towards (name of representative of community organisation) is that I will remain involved with (name of community organisation) until I feel they no longer need my input, certainly throughout my studies at the North-West University. Operations management and (name of lecturer) are the sole cause of these relationships that have been set in stone."* (Attitudinal benefit: Long-term commitment).

KPPSEB *"Participating in a group project like this, serving and giving back to the less-privileged was a first for me. This experience opened my eyes to a whole different world as we are not always aware of how little other people have and to be part of their environment put many things into perspective. I am very grateful for this experience and have learned a lot, some of these learnings are:*

Gratitude: We have much to be grateful for and we should not lose sight of this. There is much room for improvement in and around our communities and we should take each opportunity to make a difference...

Responsibility towards others: This experience opened my eyes, realizing there is so much that we as educated future leaders can improve and give back to the surrounding communities. With this new degree I feel it is our duty to improve in some way the lives of others as we are in the privileged position of bringing change to the less fortunate." (Attitudinal benefits: Gratefulness and Community orientation)

20.3.2 Quotations on the link between the community engagement project and benefits to the community partner

KPLXCD *"I could use some of my knowledge to start a long relationship between (name of community partner) and (name of donor to community organisation) which will be a sustainable one... I believe that in 50 years' time the containers that we caused to be delivered to (name of community partner) will still be part of their site layout."* (Difference: Business benefits).

ANON *"Others appreciated what they could learn from the MBA-students to make their organisations more effective and efficient. It was a humbling experience and a privilege to be involved in the*

matters of a community organisation (albeit formally only for a short while) and to make a difference in this organisation and its operations.” (Difference: Business skills transfer).

ANON “The MBA course gave me a platform to dig deep into finances and lives of the community project of our choice. Because we learnt new techniques of doing things through the course, we then shared our experiences as a group and with the community project and that was enriching, as we had to go to the poorest of the poor. They opened their hearts for us and let us into their home to assist where we could and shared their stories with us, some of which were heart breaking. This was the best part of the course and I enjoyed it.” (Differences: Improved management and Making yourself valuable).

ANON “This type of learning gave meaning to me and reassured me that I am on the right path as I could measure my impact to the world. It gave me great satisfaction to know that I was not just learning but also making a difference in the community and the organisation I am working for.” (Differences: Impact, Making yourself valuable and Personal development).

ANON “As a medical practitioner by profession, I only went to private practice to earn a living and just practise medicine... I have personally vowed that I will be involved with them for the longest time even after the MBA program as I have seen the need to give back to the community and learn how other people operate under different conditions. I will source preventative medical measures for them at no cost through different platforms that I am exposed to.” (Difference: Long-term commitment).

20.3.3 Quotations on the link between the community engagement project and personal development benefits for participants

MGMIJS “It truly did influence my outlook of the world, especially with how I approach and tackle situations. With my group project, for example, I was fortunate to be chosen as the leader, something which threw me out of my comfort zone, but I tackled it so well that even my fellow group members were impressed. I improved my leadership skills, communication skills, time management skills as well as just the good feeling you get from doing something good for others. The group really made me feel like I have a purpose and I am needed in this life. What we thought was a small difference, to them it was a whole magnitude of blessings and I hope that will last them forever.” (“Group project” referring to the community engagement project. Difference: Psychological benefits).

UMAMO *"Being involved and given an opportunity to work with the organisation with helpless children and no better income for sustainability has made me a better person."* (Benefit: Personal development).

MGMOJH *"I will cherish the opportunity of even doing the community project. This has been an eye-opener to me. Now I have gained skills that the textbook won't give me. I got a profound emotional fulfilment that no course can or has given me, I got a chance to make a significant change to people's life. Giving back does not have to be due to a course from school. This kind of project needs to be a part of my life as it will enrich the people I help and make me happy while doing."* (Difference: Psychological benefits).

20.3.4 Quotations on the link between the workplace engagement project and attitudinal benefits for participants

MGPEMI: *"My individual portfolio was the reflection of my current job. I was able to identify the gap in my department and the organisation that I work for... As I face the changing and challenging world, I have hope and confidence to soldier on."* (Attitudinal benefit: Life changing).

JGMAME *"I have come to a realisation that the department that I am employed at does not owe me a promotion. I have learnt that they have equipped me with experience, which is more than the skills I've possessed when I started working. It is up to me to challenge myself and find innovative ways of making myself valuable and create future managerial opportunities for myself. With the skills that I have acquired I will soldier on and keep developing myself further."* (Attitudinal benefit: Making yourself valuable)

ANON *"The module has given me a broader perspective of what business is all about, how it affects people and the environment we live in. It has taught me that business is not only about making profit, but also about changing people's lives and making their living standards better."* (Attitudinal benefit: Sense of corporate social responsibility).

20.3.5 Quotations on the link between the workplace engagement project and benefits for the workplace organisation

ANON *"My contribution to the organisation is something that fulfilled me wholeheartedly. As an individual, I enjoyed the Operations Management individual (workplace engagement) project because it presented an opportunity to get out of my comfort zone and get my hands dirty by interacting with officials within the organisation."* (Difference: Business benefits).

ANON *"I believe that my knowledge base, skill sets and even time management has improved vastly. I firmly believe that I can take my respective business to new heights."* (Difference: Business benefits).

PAVRGT *"I've learned... that operations management can be applied in all facets of the company and in everyday real life, that I don't need to be an operations manager to improve associates working conditions, production, customer satisfaction, waste management, productivity, quality, project management or planning."* (Difference: Business benefits).

PMPIPO *"As an employee being part of a new project, I was very fortunate to have a project manager who allowed me freedom and creativity, although I was inexperienced. The operations management knowledge became relevant in my work life as my team and I continually work on improving our operations on site."* (Difference: Business benefits).

20.3.6 Quotations on the link between the workplace engagement project and personal benefits for participants

ZTTODA (working for provincial government) *"My understanding of operations management has now been positively influenced in a sense that, as someone from the public sector I now see this as needed more in government, since we are a service rendering organisation and most of the service delivery failures are attributed to poor operations management. For example, quality management (referring to one topic in the syllabus) in public service is a by-the-way thing, so the service quality still leaves a lot to be desired. With regards to lean (referring to another topic in the syllabus), how much waste do we witness on daily basis, waste resulting in inefficiency of processes, material and so forth? ... In my view, for us to change the world this is where they're are needed the most. I can imagine how our inventory management (referring to one topic in the syllabus) contributes to a shortage of medicine within the health centres, hospitals and clinics, for example, and there are many more I can mention."* (Difference: Business orientation).

PAANST *"I know that the true value of Operations Management comes in the ability to implement what I have learnt. As mentioned above I am adopting a lean (referring to one topic in the syllabus) approach to my work, I am studying an MBA to achieve more in my career but most of all to try and make sense of people, processes and systems and how that ecosystem should be interlinked to optimisation. I have also learnt that by adopting quality in all steps that you perform and ensuring that those elements meet the customers' needs, you eliminate a lot of wasted time and end up creating more time in the process. Because I operate in a*

services environment, I tend to work towards (name of employer)'s needs of reaching a goal. But now I understand that I must also consider that the customer, the bank, is where my attention also needs to be focussed. If I continue to adopt this into my work, I am certain my work will improve ten-fold and meet both internal and external needs simultaneously." (Difference: Businessinsight)

A few participants referred to the increased visibility that resulted from the workplace engagement project. The first quotation refers to this benefit being derived from both the workplace and community projects.

JGMAME *"The individual assignments and group project have shown me light and gave me direction to where I want to see myself in the future. It has not been an easy journey, but I have slowly built my reputation at work and proved to be a valuable asset in the department. Touching people's lives has always been in the nature of my line of work, however with the theoretical knowledge from this course I have managed to see the value in that."* (Difference: Visibility)

ANON *"By making my team work together more effectively and being more respected and appreciated in the organisation, my voice is heard and acknowledged in provincial meeting."* (Difference: Visibility).

20.3.7 Quotations on the link between classroom engagement activities and attitudinal benefits for participants

JGLEMS *"Make every moment count, and have fun while you're doing it. Always give your best shot, not because you might get rewarded, but because it gives you one more reason to be proud of yourself and have less regrets, like that time I didn't take part in the rap battle and you showed us who's boss."* (Referring to the lesson learnt from one of the classroom engagement activities. Attitudinal benefit: Spirit of giving).

KPHMCT *"My Operations Management classes were fun and engaging. (Name of lecturer) knew exactly how to entertain us by making his classes more interactive than the norm. The aim of the class was to teach us how to use operations in an organisation as a competitive advantage and not as a burden. Every concept we have covered is important for successful management... It enriched my knowledge and made me think and act differently towards my personal life and in the workplace."* (Attitudinal benefit: Life-changing).

MGMIJS *"I responded quite easily to the fun and practical teaching techniques. This is the best module that I have ever attended to date. I leave as a better human."* (Attitudinal benefit: Life-changing).

Various other less-often mentioned benefits ensued, such as general career benefits (apart from visibility, as mentioned above).

RGHTJL (Government employee, referring specifically to the WIL project.) *"The course has made a difference in the way I run my daily tasks and conduct my work. This course couldn't have come for me at a better time in my career, with a new job and coming up with solutions to historical problems, a lot of those solutions were developed with the background of operations management. This course made a significant difference to my career, however there are certain units or models that are almost impossible to implement in my type of work environment. This type of work environment is politically driven. Perhaps in the future a method needs to be developed where politics and administration are forced to work hand in hand for the success of an organisation."* (Difference: Career opportunities).

20.4 Quotations on specific theme 1: The mechanisms of learning

20.4.1 Quotations on the links between expectations and knowledge and between expectation and understanding

ANON *"I expect to enhance my current level of knowledge and experience regarding the subject. I expect to gain a tremendous lot of knowledge about the most applicable and creative ways to practically apply these principles of operations management in any given situation/business/organisation as appropriate and applicable for that specific situation /business/organisation."*

ANON *"I expect to understand all the encompassing aspects to operations and the management thereof. One key aspect is to learn that operations involves more than meets the eye. To understand the application to not only my industry (banking, but) to multiple industries. To expand my knowledge on what I know to be operations management."*

However, in the final reflection and in the reflection reports there was scant reference to the expectations in conjunction with knowledge, learning and application, bar mentioning that

the experience was more than the general idea of what an MBA degree course entails. The following quotations bear witness of this.

KPLXCD *"I was fortunate and blessed to study at this academic institution this semester. I now see that this qualification is more than a degree, it is an adventure and journey that already taught me so much."*

BNNLAE *"Starting with a MBA program, one always thinks about obtaining the degree and changing your life by being promoted to a more senior position. What you do not realize, is that the knowledge and skills you do obtain from the MBA can not only change your life, but also the lives of others. Operations Management has given us all the opportunity for that ..."*

20.4.2 Quotation on the link between initial skill and knowledge

KPHMCT *"The aim of the class was to teach us how to use operations in an organisation as a competitive advantage and not as a burden. Every concept we have covered is important for successful management. It enriched my knowledge and made me think and act differently towards my personal life and in the workplace. I looked at all aspects with an 'operational' eye, applying the different principles. In 811 I do I have a better understanding of why some 'things work and others not."*

20.4.3 Quotations on the link between prior knowledge of the subject and knowledge

PMDTPT: *"Last year we had Operations Management as a subject in the Post Graduate Diploma in Management programme. This gives a student a good foundation and head start on the Masters level of study."*

HGBAJY *"The first time I have ever known what operations management is, was last year in 2017. I did get a distinction last year and hopefully this year as well. It is my favourite subject. I have tried to implement everything that I have learnt into my working environment. It was a great challenge for me. I think it is easier to implement in factories or where there is a product involved, than to implement it into a service."*

ANON *"Both the theory (during PGDM) and the practical application phases (during MBA1) were well presented."* This participant clearly sees the module as an extension of the one previously completed.

20.4.4 Quotations on the link between prior work experience in the subject field and knowledge

BTMVNO *"Operations management is a major part of my daily job. However, it was good to spend time to stand still at some issues that take place in my organisation and to again ask the question why some things are still done in a certain manner and why this step specifically is place at a certain place in the process. In my department, we have analysed each process and with each step we have asked why we do something. The result was many processes that could be simplified, because there were many changes in other parts of the process, but nobody has adapted the process and everybody have just continued as was always the norm."* (Translated into English).

From the responses there is also evidence that a lack of prior knowledge does hamper the students' initial progress, and that students with no previous experience do struggle more than those with prior experience.

STMEJH *"Doing Operations Management has been an interesting journey of discovery. During my first interaction with the course, I felt frustrated and completely lost. I had to grapple with trying to follow what it was all about, albeit the introduction of the module at the summer school. There was a point where I thought to myself that it was a mistake to include Operations Management in this course."*

WMVRJE *"Coming from a very technical, rigid background full of rules and regulations, I did not know much about operations management as I came into this course at the beginning of the semester. It was very refreshing to come into contact with a subject that have so many possibilities."*

20.4.5 Quotations on the link between the community engagement project and knowledge

ESBRNO *"I also gained a great deal of knowledge from the group project, not just on the subject or the NPO, but also from the people, the group members. People who give willingly live fuller lives, as you ensure the growth of others in the process. I appreciate all the skills and knowledge I gained from and through our group members."* This quotation also refers to the fact that the knowledge is not just gained from the community organisation, but also from the team members that are involved in the project. It could also allude to gaining soft skills.

ANON" *For both individual and group assignments, I have not just learnt theory of operations management, but also learned soft skills that I can not only use in my workplace but in my everyday relationships. My understanding of Operations Management as a subject has improved greatly*".

MGMOJH *"I will cherish the opportunity of even doing the community project. This has been an eye-opener to me. Now I have gained skills that the textbook won't give me"*.

20.4.6 Quotations on the link between the workplace engagement project and both knowledge and understanding

ANON *"One way, I have learnt the theory, which has given me a much broader perspective of the principles that are applied in the running's of day-to-day business at all levels of management (field work up to strategic organisation). In the other way, I have observed and accumulated some of the skill that it takes to actually apply such theory in the running of an actual organisation."*

STMEJH *"Doing assignments assisted in enhancing my grasp of the theories and entire content. It gave me an opportunity to interact with my work without an extra effort, and was a sort of unconscious process of digging deeper for knowledge"*.

PMPIPO *"The operations management knowledge became relevant in my work life as my team and I continually work on improving our operations on site"*.

ANON *"With the knowledge that one now possesses, I can say that public sector lacks business imbuement that is required to ensure that value is derived from every cent. As such, ops principles are not applied maximally"*.

20.4.7 Quotations on the link between engaged classroom activities and both knowledge and understanding

AGMIKO *"Perfect!!! We learn by repeating and I don't think I'll ever forget the work"*.

SGLSLS *"I enjoyed all the activities and the manner in which this course was presented and although it was fun, it definitely added to my knowledge and not just to "know" but also understanding in where it can be applied."*

ESBRNO *"Class also made understanding the literature easier, but I also find that the pre-class investigation into the literature made for better class discussions. Class activities aided in the understanding of complex elements."* This quotation also goes beyond knowledge (which he referred to as "the literature") to understanding of the knowledge.

20.4.8 Quotations on the link between knowledge and understanding

ANON *"I have not just learnt theory of operations management, but ... my understanding of Operations Management as a subject has improved greatly".*

ANON *"The module has enhanced my understanding of operations management, and entailed the comprehensive understanding of knowledge related to operations management".*

TOCENM *"They make one understand the theory much better. It will be easy for one to remember the concepts".*

20.4.9 Quotations on the link between understanding and application of knowledge

ERBRGD *"I gained a lot of knowledge and I can apply it accordingly".*

ANON *"I have learnt how to apply the theories of operations management into my job daily".*

ANON *"With the knowledge that one now possesses, I can say that public sector lacks business imbuement that is required to ensure that value is derived from every cent. As such, ops principles are not applied maximally".*

20.4.10 Quotations on the link between understanding and the broader context ("bigger picture")

DEMUJB *"Going through the module has provided me with an inclusive knowledge related to operations management. I started to comprehend that operation management is a broad concept, which is inter-related to other fields of study such as finance, marketing, human resources management, organisation structure, strategic management, etc. The module additionally improved my thoughtfulness on the connections amongst the organisation's functions, and how they come together (in a value chain) in contributing to the success of an institution and the achievement of the organisational goals".*

PAANST *"By taking the time to be more critical in how we as GIA operate, I have certainly been able to understand how each component has its role to play in the achievement of our goals. Not only that, but I believe that the subject itself has really allowed me to understand how to see a bigger picture and how to draw links between elements in an operational environment, not only in our day-to-day operations, but in my life as well."*

20.4.11 Quotations on the link between application and using the knowledge in the workplace

KPHMCT *"It enriched my knowledge and made me think and act differently towards my personal life and in the workplace. I looked at all aspects with an 'operational' eye, applying the different principles in all I do. I have a better understanding of why some things work and others not".*

MGMEBL *"The most important learning point is the application of the operations management principles to the organisation and making a contribution to the growth of the organisation".*

ANON *"What I noted with the subject is that it relates to my daily work. I thought operations management is for people who work in manufacturing, mining etc.".* This quotation clearly draws the link between workplace application in a service environment and the knowledge gained.

20.4.12 Quotations on the link between application and using the knowledge in personal life

KPPSEB *"...I can already see the profound effect this study is having on my life and I am very excited for what is to come."*

ANON *"Operations Management is one of those topics that can be applied in our everyday lives, not just in businesses. The most important thing that I have learnt is that in operations the one cannot succeed without the other. All these strategies on its own might bring you success but only to a certain point. I will take out of this class and subject a lot with me moving forward into the future".*

STMEJH *"I discovered a completely new way of structuring my life and managing my workplace. I realized that the operations management principles are all about managing my lifestyle, people and daily operations efficiently and effectively".*

20.5 Quotations on specific theme 2: Asking questions is a core communication skill

20.5.1 Quotations on the skill to share information

MGMIJS. *"It had a positive effect on my communication skills, because I can explain my point across easily and being able to be understood".*

MGPEMI *"This module will make me a better person. I can listen, communicate, share my ideas, accept negative and positive criticism, lead and be led, these are some of the soft skills that I have learnt. The soft skills didn't come cheap and I had to learn good habits and unlearn my bad habits."*

20.5.2 Quotations on the link between the classroom engagement activities and the skill to share information

PAMIMI *"My communication skills have improved due to group discussions in the contact sessions. I also had an opportunity to present in front of class."*

MERALA *"Working in teams and in class activities are good ways to communicate. I can express myself very well when I do a presentation ... to be critical when listening to people talk and listen attentively. I give good feedback."*

BNNLAE *"Class presentations definitely assisted with my public speaking abilities."*

20.5.3 Quotation on the skill to ask questions

PAVRET *"My communication skills have definitely improved. To reach my goal up to now, I had to communicate with various people in various positions. It improved my listening skills, my questioning to ensure that I understand correctly and my sharing of information."*
(Translated into English)

20.5.4 Quotations on the link between asking questions and listening

PASGMG. *"It somehow improved my listening skills. By asking a few short questions and listening to the speaker attentively, it allows a chance for the speaker to elaborate more on giving out more practical examples."*

DNSSCL *"Listen, think, listen, think - then talk. Ask questions. Explain my thinking. Asking for comments/other views."*

WKBAGE *"Communication was also a major factor here. I teamed to listen and ask the right questions."*

20.5.5 Quotations on the link between listening and understanding

PHNGFS *"I realized that talking to people on the shop floor was worth more than just talking to their managers. I needed to engage with people at all levels to really understand every part of a process, system or task."*

VGMGFE. *"I now listen with understanding, if I do not, I am able to ask questions. I am more confident in my presentations and I am able to account for my work."*

20.5.6 Quotations on the link between the skill to ask questions and understanding

PAMIMI *"The best approach is to ask probing questions and seek clarity for common understanding. Always move from the point that we all have an opinion and you don't always hold a superior viewpoint."*

ANON *"During the course of the semester, I learned that communication is very key towards the successful implementation of all tasks in a team setup. In an instance whereby a member is unsure of what is expected of them, questions of clarity need to be communicated so that operations do not suffer as a result."*

20.5.7 Quotations on the skill to listen and the skill to share information

BKMPJM *"Along the way I had to learn to listen to others, especially in group meeting. This improved communication, and keeping conversations and assertiveness."*

BFZKZZ *"I learned to speak slowly, not fast, to ensure that everyone understands, and I asked subordinates: 'Do you understand? Is it clear?' If not, I listen what they're are saying and explain again. It assisted a lot. I got feedback from one of the staff that my leadership skills improved and my communication improved."*

JGMAMA *"Communication is a two-way system. And for me it taught me to LISTEN, understand and then talk. My communication has improved to understand and talk the language they have spoken."*

20.5.8 Quotations on the development of the skill to listen with empathy, also through the community project

HLSOAS *"(My communication skill) has improved tremendously. I engaged with different stakeholders daily in my workspace such as suppliers and customers. However, my management with the community organisation improved listening, assertiveness and empathy because they are in need, by those who don't have resources."*

KPMEMA *"It helps dealing with people from different groups and backgrounds. You learn to listen carefully to the different information from NPOs and your communication style change as you start empathising with the daily problems that they have to go through and you start to understand that life is not so easy for all of us and it starts to get you to give a helping hand."*

OSMGMO *"I learned to pay attention to details, emphasise with other people."*

20.5.9 Quotations on the link between the community engagement project and communication skills

JGMAME *"I will remember dealing with group dynamics, having to accommodate different personalities and behaviours from different ethnic groups. It has been a learning curve for me. My communication skills have improved."*

MGSESE *"Being part of this was indeed a learning curve to me. I have learned a lot. It taught me to become an outgoing person, and to never be afraid to ask, if there is a need of something I don't understand."*

Since the community engagement project was carried out in study groups, there is also a strong link between group work and communication skills, specific the skill to ask questions.

WKBAGE *"Communication was also a major factor here. We had scheduled weekly meetings, feedback and updates on our WhatsApp group, group discussions as to what we all thought was an issue with the initial visit to our NPO. I learned to listen and ask the right questions. During the course of the semester, I learned that communication is very key towards the successful implementation of all tasks in a team setup. Clear communication needs to be sent out to all members in order to make sure that everyone is on the same page. In an instance whereby a*

member is unsure of what is expected of them, questions of clarity need to be communicated so that operations do not suffer as a result."

CEVNPR "For me the most useful learning experience was the emphasis on soft skills that resulted in me considering on what I have learned and how it impacts on me and my environment. By developing soft skills helped me as an introvert to communicate with others. Communication is very important; it is not always clear when someone explains an idea, and we need to have the courage to ask clarifying questions. Communication in a group context is sometimes difficult if one wants to give constructive criticism; how do you approach that person who always takes over and not give another group member the opportunity to develop? How do you include or motivate the introvert to take charge?"

MAMESE "I have learnt that there is no such thing as a stupid question in team/group discussions. And that group members are always advised to voice their opinions at all times."

20.5.10 Quotations on the link between the workplace engagement project and communication skills

BAHDTs "I have started to ask questions like why do we do the things we do in our work and how best can they be improved."

KPPSEB "What I have learned, is asking the right questions: Analysing many of the operating principles throughout my organisation I learned that before one starts to interview and ask questions related to these principles one must first have the required background knowledge and know what questions to ask. Most people value their time and asking questions related to these processes can take time, thus one needs to respect their time by knowing exactly what questions to ask and to get the right information in a timeous matter. The wrong questions can easily distort relevant information and not give context into the process/problem at hand."

MGSESE "From the individual assignments, I learned the value of asking questions and including lower/entry level employees in the strategic decisions of a company's operations. I have learned how to better access and utilise the 'soft skills' required for successful operations management."

20.5.11 Quotations on the link between engaged classroom activities and communication skills

BAHETA *"I have learnt to voice my opinion in a most calm manner and also ask each other to evaluate each other."*

WKBAGE *"I have learnt the skill of focusing on communication, asking questions, making suggestions and listening to others."*

20.6 Quotations on specific theme 3: Group community work is the most important enabler of teamwork

20.6.1 Quotations on the link between environmental team factors and team governance

The environmental team factor is mentioned in brackets after the quotation.

PGJSHK *"Each team member has his/her own strengths/weaknesses that must be managed to ensure success in the team."* (Team strengths and weaknesses)

ANON *"This was down to feeling very comfortable amongst the rest of my group and knowing that they would respect my opinion and this was the same for each member. There was always a lot of respect for one another."* (Team respect for people)

LIMAMO *"It has been a great honour for me to be involved in a team with different expertise and cultures and from different industries. No matter the differences between the project role players, there is nothing that defeats planning, commitment and dedication in order to achieve your goals."* (Team diversity)

20.6.2 Quotations on the link between team governance and team development

MGMEBL *"The group has proper communication skills and leadership skills. Everything is done at the right time and the group is always punctual."*

Participants that reported good team governance, also experienced rapid team development, as can be seen from the following quotations:

KPPSEB *"Working as a team to successfully complete all the required milestones made us improve on many aspects related to teamwork. Working together as a team we had to*

compromise on some of our own perspectives and respect one another, apply good time management and improve on communication skills".

On the other hand, teams without proper governance reported frustrations and that proper team development did not happen

STMEJH *"Disadvantages, amongst others are that the group coordinator understands him/herself to be the final decider. If such an individual is influential in a way, the group is intimidated or swayed towards the individual. Lack of accommodating others' challenges without compromised expected tasks was an unpleasant experience. I believe that as human being we need to understand that there are sometimes situations that arise unexpectedly which are beyond our control; we have to find solutions under these circumstances instead of ignoring and not being supportive to one another."*

20.6.3 Quotation the link between team development and group dynamics

MENUNL *"Our group was formed by seven individuals. We had our differences, but what I loved about us is that in the end we managed to complete and finalise all the requirements required from us. We would argue from time to time, but, because we all have one vision, we managed to stick together as one. We used to divide our work schedules as a group, and we have learnt also to work as a team. I believe after all, our group has added value to my side in terms of time management and working with other people in order to finish our project."*

PMVNLE *"The project allowed the group to grow together and created better communication and stronger cohesion among group members for future projects. Operations Management showed the group the importance of good communication, teamwork, respect, and project management. The project showed us the importance of business principles and the use of technology, even in a non-profit organisation."*

20.6.4 Quotations on the link between group dynamics and other teamwork skills

KODAMN *"As the group also I have learnt the following principles: Group Unity: Members of the group are enthusiastically involved in the efforts of their group and by recognizing the similarities that exist amount group members, members of task-oriented groups typically display great interdependence and often possess feelings of responsibility for the group's outcomes... We enjoy the previous success: When a group achieves a significant goal, the cohesiveness of the group increases because the success is shared by all the members and each one feels responsible for the achievement. When group members feel they can trust*

each other, group cohesiveness is more easily developed'. (Referring to the teamwork skills ability to trust, cohesion, collaboration, participation and sharing the responsibility).

PHNGFS *"Teamwork was essential through the course and we learnt to trust each other to get things done. This is also true in any workplace. We need teamwork because we need different skills that complement the skills of others. Teamwork is essential. We also learn by doing things together". (Trust and sharing responsibility).*

STMEJH *"The group work was marvellous. I had an opportunity to meet new people, network and learn new ideas from others. Some of the advantages I experienced with group work are that we can cover a lot of work in a short space of time. It allows debates and diverse opinions". (Participation and collaboration).*

ANON *"The group interactions helped to improve communication, delegate responsibilities and hold each to account'. (Group dynamics leading to sharing responsibilities, trust and collaboration).*

20.6.5 Quotations on the link between the community engagement project and teamwork skills development

BNNLAE *"This group project helped to underline the required skills that are important for both group and individual work; it allowed to break complex tasks into parts and steps and to plan and manage time more efficiently."*

PMVNLE *"The project allowed the group to grow together and created better communication and stronger cohesion among group members for future projects. Operations Management showed the group the importance of good communication, teamwork, respect and project management. The project showed us the importance of business principles and the use of technology, even in a non-profit organisation."*

JGMAME *"(The most important learning point from the group project was that...) I will remember dealing with group dynamics, having to accommodate different personalities and behaviours from different ethnic groups. It has been a learning curve for me. My communication skills have improved. I have learned to see positivity in every situation. It has been heart-warming to see how much we have touched other people's lives with our project."*

20.6.6 Quotation on the relationship between the workplace engagement project and teamwork skills

PHNGFS *"Teamwork was essential through the course and we learnt to trust each other to get things done. This is also true in any workplace. We need teamwork because we need different skills that complement the skills of others. Teamwork is essential. We also learn by doing things together."*

20.7 Quotations on specific theme 4: The engaged learning strategy causes little measurable difference in development of cultural awareness skills

20.7.1 Quotations on initial cultural awareness

BMDNGT *"After 20 years in the mining industry I am very used to interact and communicate with everybody and everyone."*

CEVNPR *"Because I work with different cultures every day and I know the cultural differences, it is easier to communicate by being more sensitive to differences."*

20.7.2 Quotations on the development of cultural awareness skills

ANON *"I met people from different backgrounds, with different experiences in business management. I learnt that we are not all the same and we think differently, and from time to time we need to hear other people's opinions and criticize them professionally without making them feel bad. I now understand and know how to deal with people from different ethnic groups and races in a group forum."*

LIMAMO *"Community project: It has been a great honour for me to be involved in a team with different expertise and cultures and from different industries. No matter the differences between the project role players, there is nothing that defeats planning, commitment and dedication in order to achieve your goals."*

JGMAME. *"I will remember dealing with group dynamics, having to accommodate different personalities and behaviours from different ethnic groups. It has been a learning curve for me."*

20.7.3 Quotations on the sources of cultural awareness skills

DNSITA *"Yes, the more I communicate with stakeholders, I acquired not only communication skills but also listening, decision making skills, sentence construction is based on the gender & race of people I communicate with."*

KPMEMA *"It helps dealing with people from different groups and backgrounds. You learn to listen carefully to different information from NPOs and your communication style change as you start empathising with the daily problems that they have to go through and starts to understand that life is not so easy for all of us and starts to get you to give a helping hand."*

20.8 Quotations on specific theme 5: The engaged learning strategy develops problem- solving skills

20.8.1 Quotations on the development of problem-solving skills

WMVRJE *"It was very refreshing to come into contact with a subject that has so many possibilities. The ways in which to solve certain problems differ for each individual and it really challenges your problem-solving skills and imagination to be able to find the answer that suits you. I have realized that this module is not necessarily there to GIVE you the answers, but it is there to equip you with the mind-set in order to help you find the answers that are right for your situation."*

MGPEMI. *"I always tried to think deeply and why it when I deal with different issues. I must not only have listed problems only but I must have solutions or should I say possible solutions."*

20.8.2 Quotations on the link between the community engagement project and problem-solving skills

FEMSHY *"The community project and interactions within my group taught me a vital lesson in "soft" skills (generic skills). Communication is key in all business aspects. The perfect process will fail if all parties didn't communicate effectively. Further interactions with the group has taught me to listen attentively whilst being open minded to new ideas. You gain the ability to look at a problem from a different perspective and to be able to choose the most feasible solution to a problem."*

VGSNPR *"The community feedback (without a doubt). We see gaps and work towards finding solutions to a problem. We are emotionally attached to these projects and therefore we want to make sure that they have the best tools to ensure optimal performance."*

20.8.3 Quotations on the link between the workplace engagement project and problem-solving skills

FEMSHY *"I have discovered that the solution isn't always to incur a capital investment to fix a process problem, the person working within the process has all the experience and knowledge to make a sustainable difference within the process, we as managers only have to ask and listen. I have also teamed the necessity of identifying inefficiencies within my current department/organisation and correcting them by managing the process and the people with sound operations management principles."*

KPPSEB *"In organisations where a culture of doing things in a certain way has been practised for many years, change barely occurs. This results in employees never questioning why things are being done the way they are, thus new and creative ideas barely arise. Conducting analysis throughout my organisation shed new perspective on many of the operations and how it can be improved, when presented to management some of the ideas appeared to be obvious but no-one has ever thought about it or questioned why it is not being done."*

20.8.4 Quotations on the link between engaged classroom activities and problem-solving skills

TOCEWM *"It was also very nice working in groups and the group activities in class. Here one had to think and come with the solution quickly."*

MGMOJH. *"These discussions allows us to see that problems experienced in different industries are systematic, and some allows us to learn more from each other, especially in terms of solutions they may have derived for their industry groups."*

20.9 Quotations on specific theme 6: Time management is the self-management skill that develops most through the engaged learning strategy

20.9.1 Quotations on the link between ethical behaviour and goal-setting skills

MGBOMI. *"It normally starts with an individual to make a change in his life and the organisation. As an individual you should be able to behave ethical in a work environment, should be able to set the target and be able to reach it through managing the organisation."*

PHNGFS *"I was very ethical but I like the ... focus on ethics and business together with sustainability of companies. Also the aspect of setting goals and planning to work towards them."*

20.9.2 Quotations on the link between goalsetting skills and time management skills

KPPSEB *"In the past I would have neglected some duties and procrastination was always evident. MBA forced me to realize the importance of time management and goalsetting, this whole process of change is not easy but the results and growth that results from it is just amazing."*

ANON *"It is vital to adhere to time management when doing operations so as to achieve your goals accurately and in time."*

KPKNAE *"Risk taking, goalsetting: I have experienced that I set goals for myself that goes together with time management in order to reach the goals."* (Translated into English)

20.9.3 Quotations on the link between time management skills and being proactive

MGAJMD. *"I am able to prioritise tasks and now I am able to manage my time. I am also able to take initiative and set short-term goals which I am slowly but surely achieving. I have conquered the elements of time management and I feel more confident about myself now more than ever."*

NTMACN *"Self-management and initiative, the MBA program is instrumental, because in between my studies and work I have limited time, these have forced me to be more proactive in everything so that in everything I am ahead each time."*

20.9.4 Quotations on the link between the community engagement project and self-management skills

BNNLAE *"This group project helped to underline the required skills that is important for both group and individual work; it allowed to break complex tasks into parts and steps and to plan and manage time more efficiently."*

MGMIIJS *"The most important learning point that I will always remember is that: giving back is very rewarding. There is always a way to make a positive difference. No help is ever small. Time management is a great catalyst for success."*

20.9.5 Quotations on the link between the workplace engagement project and self-management skills

RGHTJL *"The course has made a difference in the way I run my daily tasks and conduct my work. This course couldn't have come for me at a better time in my career, with a new job and coming up with solutions to historical problems, a lot of those solutions were developed with the background of operations management."*

RGNLPT *"This way of thinking also influenced my daily task at the place where I work. I look differently at each request I get and it makes me think why is this important, how can I improve it, how can I assist the person requesting the information better."*

20.9.6 Quotations on the link between engaged classroom activities and self-management skills

MGMIJS *"I am most grateful for the time management skills, because it was a thorn. I responded quite easily to the fun and practical teaching techniques."*

TGSEDD. *"I think both sessions do add value (referring to one of the classroom activities). I think they added a lot of value ...: Goalsetting and planning is really something I focus on. The challenge is the unplanned stuff imposed on one by business requirements."*

20.10 Quotations on specific theme 7: The key critical thinking skill is analytical thinking

20.10.1 Quotations on the link between the skill to ask questions and analytical thinking

PAMATE *"Analytical thinking and asking more questions in everything I do. They have enabled me to be more critical."*

MGMIJS *"I have developed analytic thinking and questioning, because I question situations more often now."*

20.10.2 Quotations on the link between analytical thinking skills and challenging the status quo

CEVNPR *"The most important skill I have learnt is analytical thinking, I have begun to ask 'why?': I want to challenge the system."*

CEVNPR *"It is challenging, but introduces oneself to thinking "what if?" more on a regular basis and not just accepting the status quo."*

20.10.3 Quotations on the links between challenging the status quo and open-mindedness, creative thinking, solution orientation and ability to focus on important issues

JGLEMS *"Slowly but surely, those critical thinking skills are becoming second nature. I now handle situations with an open mind and I'm not so attached to everything anymore and that's awesome, because I know not to take everything in life so seriously anymore."*

SGLSLS *"Understanding what the right questions are and to think out of the box with possible solutions."*

KPPSEB *"An outside perspective can make all the difference: In organisations where a culture of doing things in a certain way has been practised for many years, change barely occurs. This results in employees never questioning why things are being done the way they are, thus new and creative ideas barely arise. Conducting analysis throughout my organisation shed new perspective on many of the operations and how it can be improved, when presented to management some of the ideas appeared to be obvious but no-one has ever thought about it or questioned why it is not being done."*

ANON *"Makes me think much more critical on every aspect of a situation and not just accept the outcome."*

ANON *"Creative thinking - looking for solutions that is generally overlooked."*

WKBAGE *"Understand your problems, ask the right questions, and don't always assume that the answer you have is the right one, or the only one for that matter. Think outside the box, there is so much more than what meets the eye."*

20.10.4 Quotations on the link between challenging the status quo and solution orientation

MGAJMD *"I have developed the skills of creative thinking, questioning, and solution attention. I am able to analyse any situation, and strive to develop solutions to any problem. I actually enjoy creative thinking and being able to convince people while helping them understand the concepts."*

PHNGFS *I sometimes have to ask myself during meetings at work and during discussions not to be too critical. It's good to see the critical issues, I feel that I am already starting questioning in such a way as to ask for solutions from the others (also to get proper buy in)."*

20.10.5 Quotation on the link between challenging the status quo and focusing on important issues

PAANST *"My colleagues have already noticed a shift in my approach to performing my work. One commented to say that I am continuously trying to find ways to eliminate wasteful tasks in executing an audit, whilst not compromising set methodology guidelines and quality" and that I am more critical in preparing my reports to ensure that important information is pre-empted and reducing the time it takes me to produce the report."*

20.10.6 Quotations on the link between the workplace engagement project and critical thinking skills

RGNLPT *"This way of thinking also influenced my daily task at the place where I work. I look differently at each request I get and it makes me think why is this important, how can I improve it, how can I assist the person requesting the information better."*

ANON *"It has imparted in me the ability to critically assess the specific operational aspects of a company and to implement operations based solutions and systems to increase the efficiency of a company's operations."*

20.11 Quotations on specific theme 8: Relationships between different generic skills

20.11.1 Quotations on the link between communication skills and teamwork skills

BNNLAE *"Teamwork is through and through about communication, building trust. We must keep up communication".* (Translated into English).

ANON *"During the course of the semester, I learned that communication is very key towards the successful implementation of all tasks in a team setup. Clear communication needs to be sent out to all members in order to make sure that everyone is on the same page. In an instance whereby a member is unsure of what is expected of them, questions of clarity need to be communicated so that operations do not suffer as a result."*

20.11.2 Quotations on the link between communication skills and critical thinking skills

SGLSLS *"I also learnt that asking questions is one of the most powerful skills in any operational environment and how to critically look at how "things" are done, always keeping in mind that there is always something, no matter how small, that can be improved."*

ANON *"We need to continuously try to improve anything that we do, ask the tough questions of why is this done in this specific way and how can we change it."*

20.11.3 Quotations on the link between communication skills and problem-solving skills

MGMIJS *"More often than before I have developed a tendency of asking questions and mapping out possible solutions to problems."*

FEMSHY *"Further interactions with the group has taught me to listen attentively whilst being open-minded to new ideas. You gain the ability to look at a problem from a different perspective and to be able to choose the most feasible solution to a problem."*

VPPEJH *"Listening to the opinions of others often brings up different ideas, a different outlook on problem solving and effective management of operations."*

20.11.4 Quotations on the link between communication skills and cultural awareness skills

KPPSEB *"When working with other people inside their workspace it is important to respect their culture and to understand them as much as possible. By doing this you will be in a much better position to make them feel comfortable enabling you to build rapport with them. By finding rapport with them, they will be much more likely to talk openly towards you, enabling you to get the necessary information."*

MGMEBL *"Cultural awareness is the foundation of communication and it involves the ability of standing back from ourselves and becoming aware of our culture values, beliefs and perceptions."*

ANON *"I met people from different backgrounds, with different experiences in business management. I learnt that we are not all the same and we think differently, and from time to time we need to hear other people's opinions and criticize them professionally without making them*

feel bad. I now understand and know how to deal with people from different ethnic groups and races in a group forum."

20.11.5 Quotations on the link between teamwork skills and cultural awareness skills

JGMAME. *"I will remember dealing with group dynamics, having to accommodate different personalities and behaviours from different ethnic groups. It has been a learning curve for me. My communication skills have improved."*

ANON *"Through this module I learnt to be more patient, compassionate, I learnt to listen with understanding and to voice my opinions with confidence as I was working with a group of 6 other people from completely different backgrounds. Their experiences and how they do things taught me a lot of things."*

20.11.6 Quotations on the link between self-management skills and problem-solving skills

ANON *"The most important lesson that I learned from the entire semester is to always approach each problem in a solution mode. Instead of complaining about what is wrong, rather think of a solution on how to fix the problem. I also learned that not every problem is within my reach to fix, but I can solve those around me and those I have the ability to."*

RGNLPT *"This way of thinking also influenced my daily task at the place where I work. I look differently at each request I get and it makes me think why is this important, how can I improve it, how can I assist the person requesting the information better."*

20.11.7 Quotations on the link between critical thinking skills and problem solving skills

KPPSEB *"An outside perspective can make all the difference: In organisations where a culture of doing things in a certain way has been practised for many years, change barely occurs. This results in employees never questioning why things are being done the way they are, thus new and creative ideas barely arise. Conducting analysis throughout my organisation shed new perspective on many of the operations and how it can be improved, when presented to management some of the ideas appeared to be obvious but no-one has ever thought about it or questioned why it is not being done."*

WKBAGE *"Understand your problems, ask the right questions, and don't always assume that the answer you have is the right one, or the only one for that matter. Think outside the box, there is so much more than what meets the eye."*

20.11.8 Quotations on the link between teamwork skills and leadership skills

ANON *"The group work taught me that one should always leave room to be led by someone, also to lead people and to have an open mind because we all come from different work backgrounds, customs, culture and the fact that we all don't think alike."*

ANON *"Working in a group is not easy, but this course has taught me group dynamics, enhanced my leadership skills and also enhanced individual conflict resolution skills."*

20.11.9 Quotations on the development of decision-making skills

MGSESA *"Decision-making was one of the things I have also learnt within the organisational point of view, as well time management."*

FEMSHY *"My communication skills improved by a certain degree as to assert my decisions, but also listen and be open-minded towards team members."*

20.12 Quotations on specific theme 9: The "flipped classroom" is an important enabler of the engaged learning strategy

ANON *"This method of teaching is good, even though it kept both the lecturer and students busy. I was able to be up to date with my work and understand my work better. Feel free to sell this teaching method to other modules."*

ERBRGD *"The flipped classroom approach is fantastic. I feel that all the MBA subjects should be presented in this way."*

TOCEWM *"When it comes to the class preparations before the class; that worked well for me as I was better prepared and it was easy to follow during the presentation."*

VGHNHS *"The weekly summary of the theory forced me to give attention to the theoretical aspects of operations management."*

20.13 Quotations on specific theme 10: Engaged learning facilitates leverage of effort

20.13.1 Quotations from the community engagement project

QAMOMI *"The group also learnt that it's not all about implementing big changes for one to get results, but that implementing small changes successfully can also lead to create success for the future of any organisation."*

PAVRGT. *"Over a short period of time and using relatively little time a person can make a large difference in others' lives. That small organisation need operations management just as much to make a successful living as large companies. That welfare organisations not always have the abilities or assistance to bring about operational changes and improvements. People involved at these organisations are thankful for every bit of help that they can get. By spending a bit of time, and not necessarily donating money, one can improve the work conditions at these organisations. By making the work of personnel easier, a positive wave is sent through the organisation, people, people who are being assisted and the community."* (Translated into English)

20.13.2 Quotations from the workplace engagement project

RGNLPT. *"Small changes can have a big influence on most organisations. Do not look for huge changes that will be challenging, but small, easily changeable issues to start small with. Also talk to the employees: They know what they need most."*

WKBAGE *"I have seen in my organisation by just making small changes you can have major effects. The changes I have suggested have shown positive results and they are a good step in the direction the prime broking team is aiming for over the next few years. From what I was taught during the semester there is still plenty that can and most likely will be done."*

20.14 Quotations on specific theme 12: Mechanism of the community engagement project

20.14.1 Quotations on the link between the community engagement project and the difference it makes

ANON *"Others appreciated what they could learn from the MBA-students to make their organisations more effective and efficient. It was a humbling experience and a privilege to be*

involved in the matters of a community organisation (albeit formally only for a short while) and to make a difference in this organisation and its operations."

MGPEMI "My group project was really a good thing to do: I was able to see how fortunate I am. The organisation we choose was an orphanage. How can I ever visit the less fortunate and still be the same? My life changed and I have committed to support the less fortunate. I have made new friends and networked a lot. As a group leader I have improved my leadership skills. I learned more about how to deal with different cultures and personality characters."

MGMOJH. "I will cherish the opportunity of even doing the community project. This has been an eye- opener to me. Now I have gained skills that the textbook won't give me. I got a profound emotional fulfilment that no course can or has given me, I got a chance to make a significant change to people's life. Giving back does not have to be due to a course from school. This kind of project needs to be a part of my life as it will enrich the people I help and make me happy while doing."

20.14.2 Quotations on the link between the community engagement project and project results

ANON "I have gained the following insights during and after the Operations Management course: Operational principles should be shared at a level that is fully understandable by the recipients; Operational principals can be applied to all types of businesses, these include corporates and NPO's; and if everybody can play a role to improve the lives of community members through the application of operational principles."

ANON "The experience we had on the community project is immeasurable. I understood the application of operational management on the service delivery-based project and the ability to translate theory into practice."

ANON "The experience at (Name of community organisation) was truly a humbling one and it made me realize that there are causes and charities at really need the help and support from ordinary people like us. Even if it is just in the form of giving your time to help. The principles that were implemented left me with a sense of pride and achievement to have been part of this group and achieve so much in such a short time. I enjoyed working in this group and would like to continue doing so."

20.14.3 Quotations on the link between the community engagement project results and sustainability

PHVKAA *"We engaged with the top management of the organisation to upskill them, their knowledge and their ability to make a sustainable change. I feel strongly that the upskilling we did and continue to do will be a longer lasting effect."*

PHNGFS *"The Community Project was really good for me as it showed me that we could make a difference in the lives of others not costing us a cent and yet have a lasting, sustainable impact. I learnt that my small contribution in time and effort can make a difference. I was also challenged to be involved with something like this on a more permanent basis as it not only means something to others, but also allows me to grow as a person."*

PAANST *"Not only did we create a sustainable change but we were also able to effectively show how a robust discussion with a supplier can yield such a positive outcome."*

WTSSFH. *"(I have learnt that) a community project is about a sustainable impact. No community organisation can function well, unless with the support of the host community."*

20.15 Quotations on specific theme 13: Mechanism of the workplace-engagement project

20.15.1 Quotations on the effect of company culture on the workplace engagement project

ANON *"I have learnt a great deal about the operations within my organisations and seen some of the steps used in some of the processes that could have been made much simpler with just the click of a button or the sign of one order form. Unfortunately, with all operations there are specific procedures and steps one needs to follow before you are able to implement some of the operations procedures you want to follow and there are often parties that aren't willing to accept new ways of doing things and that often brings in some form of difficulty."*

KPPSEB *"Creating change is not as simple as it seems to be: By analysing operations principles throughout an organisation and providing recommendations can be straight forward, but to implement those recommendations can be much more difficult. The implementation of simple recommendations within big organisations where certain cultures have already formed, can make it very difficult in bringing change as personnel are used to doing things in a certain way and asking them to change can result in resistance towards the idea. Creative ways of implementing*

solutions need to be pursued to ensure engagement from all levels and it should be driven by management."

20.15.2 Quotations on the link between the structure of the workplace engagement project and application

ANON "What I think was also very important and relevant for this module was the mindedness of the approach, the module allowed for personal involvement with existing businesses, and small enterprises, etc. This was important for the practicality of the module as shortcomings could be spotted and manner of correction was the idea that we as students came up with and had discussions like the real professionals with business owners to convince them of their potential."

GLMIRT "We got to share ideas and coming with different initiatives on how to address challenges within the organisation. The individual assignment assists in understanding the organisation's main objectives and needs for improvement."

20.15.3 Quotations on the link between workplace application and learning

ANON "As a medical practitioner by profession, I only went to private practice to earn a living and just practise medicine. The Operations Management course has really opened my mind to new possibilities and has made me realize that businesses can rise and fall depending on how they are run. Learning about inventory management has made me realize that I wasted a lot of money on expired medication, with some of them expiring without me even realising. My circumcision project that has been running yearly did not reach its targets due to poor management and lack of planning. I am positive that this year and going forward we will reach the target with proper planning and the different tools I have learnt in this course."

ANON "I have learnt the theory, which has given me a much broader perspective of the principles that are applied in the running's of day to day business at all levels of management (field work up to strategic organisation)."

ANON "Honestly, I only understood the importance of this module at the very end. Our personal day-to-day operations keeps us so busy that we forget that the main aim of this module was to gain knowledge and through that improve operations in our respective companies. I believe that my knowledge base, skill sets and even time management has improved vastly. I firmly believe that I can take my respective business to new heights."

20.16 Quotations on specific theme 14: Not all engaged classroom activities are equally effective

20.16.1 Quotations linking flipped classroom and voice feedback

HGBAJY *"The personal voice notes had helped a lot. It's a personal support to you as individual."*

PAANST *"I have also truly valued the time of my lecture and his notes to me that were tailored for my specific needs."*

20.16.2 Quotations linking preparation and discussion of request

MSMJMJ *"The slides before help us to prepare before class, so that we can participate in class."*

TGSEDD *"This, I think, is an excellent way of teaching as I come well prepared to class and therefore all my questions on things that are unclear would be prepared well in advance. I now can go back and close the gap nicely."*

MGMEBL *"The slides before contact are more detail and understandable and the applications of the class slides is fostering to my needs. Important factors have been clarified in class."*

20.16.3 Quotations linking voice feedback and engaged learning

HGBAJY *"The personal voice notes had helped a lot. It's a personal support to you as individual."*

PAANST *"I have also truly valued the time of my lecturer and his notes to me that were tailored for my specific needs, which certainly grew one of my biggest strengths, that of relationship management."*

MGMDJH. *"(I valued) especially your feedback after the contact session, when you touched on communication skills in a group and in our organisation. I have been a very timid person previously, how ever since the semester began I have significantly improved. Continue to apply what I have learnt from prof and the contact sessions."* (Referring to some coaching done on the voice note.)

20.16.4 Quotations linking group discussions and engaged learning

MONIAM *"The group feedback adds value, as I learned a lot from my peers, in addition to what I already know."*

PAANST *"I was very interested to hear experience from industry and the key insights I would have potentially overlooked in my assignment."*

TOCEWM *"They make us to understand the operations from different perspectives."*

20.16.5 Quotations linking lecturer passion and dedication and prayer

MGCRLN *"Thank you, (Name of lecturer), for all your efforts. You have done all you should and so much more. The prayers before each contact session, your ability to help with our research and your quick response to all our complaints truly demonstrate your commitment towards your students. Your classes were the best."*

ANON *"The first contact with my facilitator was very inspiring and motivating. What impressed me most was the personality of my lecturer and in all my studies it was the first time to meet someone who is not afraid of his religion. Christians especial tend to hide away when it comes to their belief. I was motivated and I wanted to do more especially after seeing his presentation. I realize that the person I would have contact with, takes his work very seriously."*

20.16.6 Quotations linking lecturer passion and themed t-shirts

CEVNPR *"(Name of lecturer), thank you for the passion that you show in your subject and going the extra mile and learning our names. It is something so small, but it makes a significant impact on the students. And your customised shirts was phenomenal, I could not wait to see each contact sessions shirt's joke."*

JGMADL *"We actually were talking about it. It's very strategic and well thought of. It shows the effort and passion that you have."*

20.16.7 Quotations linking themed t-shirts and enjoyment

MGMOJH. *"Mostly they are interesting and I always wonder how prof came about thinking of the shirts got to the messages on that, and yes they are very valuable."*

PMNST *"I really enjoyed your T shirts. They do capture the essence of the topic at hand."*

ANON *"It is visual and keeps the person wondering. It's good; New innovations in teaching methods. I'm always looking forward to the next message on the shirt."*

20.16.8 Quotations linking enjoyment and participation

VPPEJH *"The learning environment was very beneficial and enjoyable; one has really learned a lot through taking part in the whole process."*

KNBTPR *"On a very positive note I enjoyed the classes: ... They were interactive and informative. Every student had an opportunity to participate and give their own opinions and experiences from the perspectives of their specific industries."*

JGMAMA *"It makes the subject more interesting and it makes the subject more practical. I understand and it is very relevant to our day to day work environment."*

20.16.9 Quotations linking simulations and enjoyment

BMDNGT *"A good practical way to grasp or understand certain concepts, and it is fun and encourages interaction between students."*

HNDSJE *"Apart from creating a joyful and conducive learning environment, it also demonstrates more complex issues in a much simpler way that makes it easy to understand, to internalise and to remember."*

VGSNPR *"It is enjoyable & assists with understanding the topic in a fun & playful manner."*

20.16.10 Quotations linking participation and engaged learning

VPPEJH *"Finally, the learning environment was very beneficial and enjoyable, one has really learned a lot through taking part in the whole process."*

MGCRLN *"I experienced (name of lecturer)'s class as the most educational, interactive and comprehensive lecture yet. Thank you very much"*

VKVFJN *"I like it! Much more interaction. My idea of MBA: We must learn from each other – have conversations, etc... not just one directional communication."*

20.16.11 Effect of engaged learning on generic skills

PMPIPO *"Mostly individual feedback, as it is a raw reflection of my environment and it assists in looking at issues in a critical manner."* (Critical thinking)

VGSNPR *"We see gaps and work towards finding solutions to a problem. We are emotionally attached to these projects and therefore we want to make sure that they have the best tools to ensure optimal performance."* (Problem-solving)

ANON *"Random class presentations that we had to prepare and deliver, sometimes on very short notice, had helped me especially to be on my toes and alert at any time."* (Communication)

CEVNPR *"With the group feedback we are out of our comfort zone, which is more uncomfortable. Where with the individual feedback is closer to home and we get more exposure to the other companies. Which identifies that we in general have the same issues."* (Self-management)

20.16.12 Quotations linking videos and real-world examples

WMVRJE *"The visual stimuli really help bring the concepts home. I still remember the dishwasher packing video and the FedEx video, which is a testimony to the effectiveness of the teaching method."* (Referring to specific videos shown in class)

ANON *"The classes with the video clips and group work were excellent. Must say, this was the best class ever and I was looking forward to these classes every Saturday."*

NTMACN *"The video is very important, assist me in applying the theory because I am not in the manufacturing sector, sometimes I struggle to apply the theory in public services environment."*

20.16.13 Quotations linking live cases and engaged learning

ANON *"My perspective of how to analyse a business process has changed drastically and I can now make meaningful contributions to any company I work for... Live examples in the form of storytelling and videos made learning very easy and motivated me to always look for innovative ideas of changing the environment where I live and my current profession."*

MERMDC *"The presentations were clear and the use of "stories" clarifies the topics even better."*

20.16.14 Quotations real-world examples and engaged learning

ANON *"Live examples in the form of storytelling and videos made learning very easy and motivated me to always look for innovative ideas of changing the environment where I live and my current profession."*

MGPEMI *"Let me start with the lecturing style, it kept me busy but it doesn't mean that it is wrong; actually it is one of a kind. The work load we had was spread nicely throughout the semester. Well done. Keep on advocating for this method of lecturing."*

ANON *"Your illustrations were on point and those videos give me more insight and knowledge on the subject matter. How can I forget the sound slides that you prepared for the course? They made life easy."*

20.16.15 Quotations linking enjoyment and all other codes

Enjoy and engaged learning

KNBTPR *"On a very positive note I enjoyed the classes with (name of lecturer): They were interactive and informative. Every student had an opportunity to participate and give their own opinions and experiences from the perspectives of their specific industries."*

PAVRGT *"Really enjoyed it. No 'death by PowerPoint'. Also helps to interpret the subject and to make it practically applicable."*

ANON *"Overall, personally there are a lot of new things that I have learnt from this experience and I feel that if possible the approach which was used to conduct this module should be practiced through the other modules, as it gives the students a holistic view of the contents as well as the practical implications thereof."*

Enjoy and group discussions

MGCELD *"(Group discussions were) very good and interesting; practical examples are really fun and interesting."*

STNAMA. *"Fun and learning discussions. They make me to review the organisation with a different set of eyes."*

PABHDN *"I enjoyed it. It was enjoyable to sit with other groups and meet new people."*

Enjoy and videos

MGPEMI. *"Yes, the videos add value and they are self-explanatory. I enjoyed them a lot."*

TAMEEA. *"They break the ice, fun, entertaining and educating."*

Enjoy and learning

SGLSLS *"I enjoyed all the activities and the manner in which this course was presented and although it was fun, it definitely added to my knowledge and not just to "know" but also understanding in where it can be applied."*

MGMIJS *"I responded quite easily to the fun and practical teaching techniques. This is the best module that I have ever attended to date. I leave as a better human."*

HNDSJE *"Yes indeed! Apart from creating a joyful and conducive learning environment, it also demonstrates more complex issues in a much simpler way that makes it easy to understand, to internalise and to remember."*

Attachment 21. Structure of codebook

The codes are arranged according to the original constructs in **Error! Reference source not found.** Cells have been shaded to coincide with the colours allocated to them in Atlas.TI.

THEME	Category	code	Category	code	Category	code	Category	code	
E-ENGAGEMENT	ES Service-learning	es group project	EW Work Integrated learning	ew individual project	EC Classroom	ec flipped classroom	EP Personal	ep voice feedback	
		es community project		ee indivicual assignments		ec preparation		ep e-mail feedback	
		es community organisation		ee investigation		ec voice feedback		ep know names	
		es poor				ec videos		ep phone	
		es needy				ec industry discussions			
		es help				ec diverse discussions			
		es ngo				ec group discussions			
		es npo				ec t-shirts			
						ec songs			
						ec simulations			
						ec reflection			
						ec discussions of request			

THEME	Category	code	Category	code	Category	code	Category	code
A-ATTRIBUTES	ACA Cultural Awareness	aca diversity	ATW Teamwork	atw conflict handling	APS Problem Solving	aps source of problems	ACm Commu-nicate	acm listening
		aca cultural intelligence		atw conflict handling		aps success		acm body language
		aca values		atw leadership		aps collaborative		acm asking questions
		aca interacting		atw respect		aps creativity		acm understanding
		aca communication issues		atw assertiveness		aps perseverance		acm checking understanding
		aca confidence		atw helping		aps information finding		acm getting across
		aca learning		atw responsibility		aps premature conclusions		acm participating
		aca non-verbal signs		atw diversity		aps implement		acm convincing
		aca gender		atw team dynamics		aps anticipate		acm persuading
		aca religion		atw motivating				acm language command
		aca adaptability		atw share				acm influencing
				atw networking				acm impression

THEME	Category	code	Category	code	Category	code
	ASM Self Management	asm grit	ACT Critical Thinking	act questioning	AOt Other	aot leadership
		asm adaptability		act challenge		aot decision-making
		asm focus		act looking deeper		aot resource finding
		asm time management		act discuss		
		asm goal-driven		act cause and effect		
		asm reward				
		asm follow-up				
		asm enthusiasm				
		asm awareness				
		asm dedication				
		asm distraction				
		asm finisher				
		asm hardworking				
		asm conscientious				
		asm confidence				
		asm grateful				

THEME	Category	code	Category	code
L-LEARNING	LLM Learning matter	llm understanding	LEx Expectations	lex learning
		llm growth		lex understanding
		llm all disciplines		lex growth
		llm work environment		lex networking
		llm community		lex opportunities
		llm personal life		lex promotion
		llm specific topics		lex academic
		llm optimising		
		llm application		
		llm teaching - pass on		
		llm further studying		
		llm bigger picture		
		llm aha		

THEME	Category	code	Category	code	Category	code
M-MODE-RATING	MM MBA issues	mm study group dynamics	MW Job issues	mw time constraints	MF Family issues	mf neglect family
		mm busy		mw travel		mf family obligations
		mm other assignments		mw absence		mf friends
						mf private life

THEME	Category	code	Category	code	Category	code
B-BENE-FITS	BD Difference	bd awareness of need	BA Attitude	ba continuous involvement	BC Career	bc promoted
		bd help the poor		ba learn about poor		bc networking
		bd systems		ba feels good to help		bc knowing the organisation
		bd sustainable difference		ba work ethic		bc opportunities
		bd own skills development				bc visibility
		bd transfer knowledge				
		bd meaningful				

THEME	code
SALIENT	@before
	@after
	@mafikeng
	@potch
	@vaal
	@pgdip
	@no pgdip
	@negative
	@public
	@private
	@soe