Chapter Three

Conceptual framework and literature review

3.1 Introduction

It cannot be denied that education in South Africa is in a crisis (Bozsik, 2013; Jansen, 2012). In the 2012 World Economic Forum Global Competitive Index relating to 144 participating economies, South Africa ranked 133rd for quality education, and 115th for primary education enrolment (Bozsik, 2013). The results of the Annual National Assessment (ANA 2012) for Grade six showed that numeracy and literacy are at a shocking 27% and 43% respectively. Students' educational needs are clearly not met (Bozsik, 2013). Results remain poor, in spite of the fact that more individuals than ever before are in the education system and the qualification level of teachers are increasing (Bozsik, 2013).

In order to assist learners to achieve a better future, this study focuses on teacher-students: to enhance their learning experiences and consequently their teaching performance. Through motivating them to develop their potential in order to reach higher accomplishments, these teacher-students could become motivated to break through mediocrity in their teaching and learning. By performing better at school, students stand a better chance of finding employment, or accomplishing further education and thereby contributing to the economy.

This study focuses on teacher-students enrolled for the BEd Honours research module (RSPR 671) through ODL at the NWU. The researcher created a Facebook learning support group for Eastern Cape rural students. This Facebook group attempted to tap into the potential of social media to improve the learning experience of geographically remote teacher-students (Kok & Blignaut, 2009). Social media platforms are conducive to implementing constructivistic teaching and learning strategies in learner-controlled environments. Constructivistic learning is proactive and empowers students to become orchestrators of their own learning (De Villiers, 2010). Students are empowered to take part in the experience. It takes *teacher-learner interaction* to a different level and contributes towards an enriched learning experience. Students work collaboratively to understand and interpret learning material in order to apply it to their real-world situations. The role of the teacher changes from being a knowledge disperser to that of a facilitator (Muhuro, 2008). This is in contrast to traditional instructivist learning methods where teaching takes place in teacher-controlled structured systems with set curricula. Yet, the older generation struggles with changing from instructivism to constructivism. Exposure to empowering situations is essential for the development of higher order thinking skills (De Villiers, 2010; Muhuro, 2008).

3.2   Conceptual framework

The researcher selected the Kruger (2012) conceptual framework for this study as it provides a structure for the implementation of ICTs for ODL. The framework combines various issues and technologies in the current learning environment and outlines strategies which can be implemented to support the learning experience of rural teacher-students in ODL (Kruger, 2012) (Figure 3.1). The framework comprises five concentric layers (from the centre, outwards). They are the (i) student; (ii) curriculum aspects; (iii) strategic principles; (iv) criteria of excellence; and (v) outcomes of implementation of ICTs for ODL.
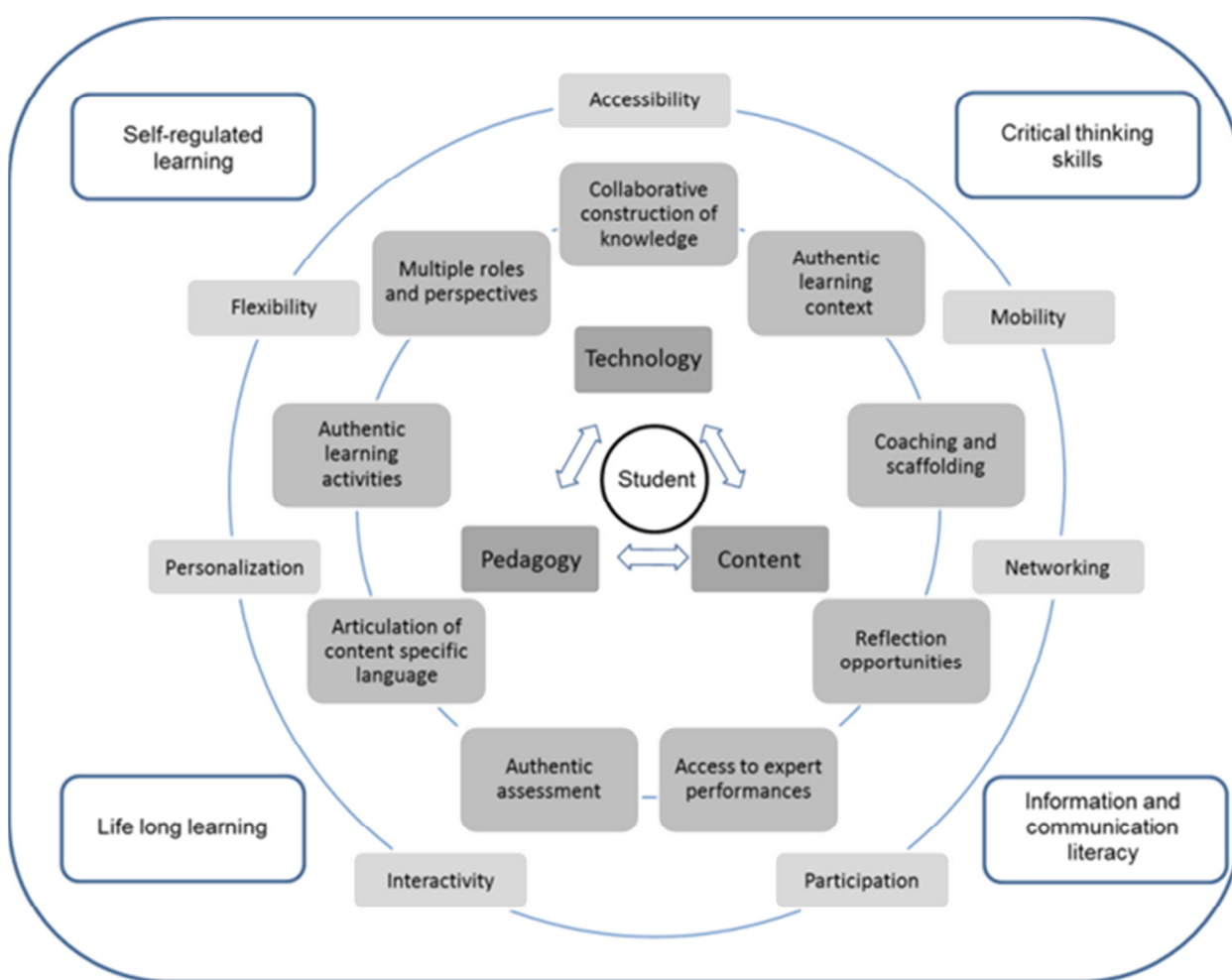

Figure 3.1:   **Conceptual framework for implementing ICTs for ODL** (Kruger, 2012)

3.2.1   Student

The student (A) is the focus of teaching and learning practices. This section reviews the participants' cultural and educational background, the programme which they enrolled for, and the technological challenges they may experience. This study aims to provide understanding of how isiXhosa teacher-students from disadvantaged communities can be augmented with current technological media like

Facebook—a social media technology that has permeated the modern western society (Nagel & Verster, 2012).

3.2.1.1   Social and cultural background

Students enter into learning environments, bringing along their own beliefs, prior knowledge, attitudes and concepts gained from different situations (Botha, Vosloo, Kuner, & Van den Berg, 2009; Hakkarainen, Saareleinen, & Ruokamo, 2007; Nel, 2011; Rambe, 2012) and therefore it is necessary to get acquainted with who they are. Bloch (2012), Nel (2011) and Rambe (2012) agree that all cultures value education: "...education and learning are about the creating [of] intellectuals" (Bloch, 2012, p. 17). However, the manners in which they believe the creation of knowledge occurs best, and the roles that students and facilitators play, vary from culture to culture (University of Johannesburg, 2011). The diversity of students should be considered in terms of initial qualifications (§ 2.2), as well as their lived school experiences (Botha *et al*., 2009; Nel, 2011). By determining what students already know in terms of coping strategies for various situations, this can be used to build knew knowledge (Nel, 2011). "This previous knowledge is the raw material for the new knowledge they will create" (Brooks, 2013). To create a vibrant developmental movement in South Africa, it is necessary to have up-and-coming intellectuals striving for academic excellence (Mukundi, 2009, p. 60; University of Johannesburg, 2011). Mahuika (2008) invites researchers to go beyond what is currently known and to uncover unexamined thoughts and practices in order to reach people's emancipatory potential. The challenge lies in maintaining students' identity, yet *being able to participate fully in society and in the communities of the world* (Forster, 2003). It is therefore important to discover *which technologies should be used* and *how they can be implemented* to support the learning experience of rural teacher-students in the South African context (University of Johannesburg, 2011). This study examines the affective emotions of teacher-students while learning by utilising technology.

Education systems globally face high attrition rates of facilitators in rural schools (Herrington, Herrington, Kervin, & Ferry, 2006). To attract and retain professionals in rural areas is important because of the educational outcomes which learners should reach who are living in these areas. It is important to provide a "dynamic environment of resources and community support, enabled by information and communications technologies" (Herrington *et al*., 2006), to obtain good teachers for rural areas. In South Africa, rural schools are the most costly for the Department of Basic Education (DBE), yet the level of education these learners obtain remains disappointingly low.

Learning as a social act is situated in social and cultural contexts which enable collaboration with members of the learning community in whichever settings, and are not dependent on differences or similarities. In many cases, students in the learning environment, find it impossible to acculturate Western worldviews and knowledge systems and play memory games with the learning content. Teaching through memory games enables students to memorise enough to pass tests and examina-

tions. However, no meaningful learning takes place, which means that the acquired knowledge cannot be applied in real-life situations (Naidoo, 2002).

3.2.1.2   Teacher-students as adult learners

Adulthood is when maturation is reached in various spheres of an individual's life, especially with regard to biological, legal and psychological behaviour, and social state (Robinson, 2013). The focus is on assisting adults to "increase competence, or negotiate transitions, in their social roles (worker, parent, retiree, etc.), to help them gain greater fulfilment in their personal lives, and to assist them in solving personal and community problems" (Darkenwald & Merriam, 1982). Adult education is working with adults and promoting learning in adulthood. A description of adult education relates to "activities intentionally designed for the purpose of bringing about learning among those whose age, social roles, or self-perception define them as adults" (Robinson, 2013). Adult education is also the relationship between external conditions to assist internal modification through the process of learning, and therefore it involves a conscious effort to learn something. Adults engage in educational activities with a specific purpose in mind, for instance, to improve present qualifications, or to embark on a new academic field (Tallman, 1992).

The purpose of adult education is to (i) facilitate change in a dynamic society, such as updating professional knowledge and technological skills to keep in touch with the rapidly changing role expectations for adults; (ii) support and maintain good social order, because adults should gain skills and knowledge to function in a democratic society; (iii) promote productivity to enable entry level and experienced employees to continually improve their professional abilities, and (iv) enhance personal growth, which is a primary goal according to Maslow's self-actualization theory wherein a person should strive to reach full potential (Tallman, 1992).

Malcolm Knowles designed a set of assumptions about adult learning (in the 1970s) which he called *andragogy* as opposed to pedagogy. These two methods can be seen as the "two ends of the spectrum of teaching approaches that can be implemented with both adults and children" (Tallman, 1992). Table 3.1 compares andragogy to pedagogy based on Knowles' four basic assumptions:

Table 3.1   Comparison between andragogy and pedagogy

Andragogy	Pedagogy
Adults view themselves as self-directed students	Students are dependent on facilitators for direction regarding content of learning activity
Learning focuses on solving immediate problems and improving performance	Learning material is learned for future use
Adults' readiness to learn is based on their need to cope with life tasks	Young students learn as a result of society's demand because it is time to learn (age) and a uniform curriculum is followed
Life experiences form the foundation for understanding new information	Life experiences are of little value in the learning environment

*   Knowles (1990)

Table 3.2 highlights the differences between andragogy and pedagogy as teaching and learning concepts. Andragogy moves in the direction of constructivist teaching methods (§ 3.2.2.1) which are learner-centred, whereas pedagogy is still caught up in instructivist teaching methods which are mostly teacher-centred (Mdakane, 2011).

Four general patterns of thought underpin adult education practices: (i) *Analytic* is teacher-centred and focuses on purposes, methods of delivery and evaluation of the learning activity. Information is prescribed and does not challenge existing knowledge of students or their contexts. (ii) *Practical* is learner-centred and allows students to create their knowledge and to see that knowledge is not static—it continuously evolves. Reality is acknowledged as being created by history, politics and social influences. Knowledge does not come from one perspective but originates from lived experiences and interactions. Conversations between facilitators and students create the direction in which the learning activity should go. (iii) *Critical praxis* comprises questioning and looking beyond societal dynamics to see the *power structures among individuals and groups*. It empowers and gives a voice to marginalised students and creates delivery of education according to their world view. They realise that they must do something for themselves (action) and need to change their outlook as well as their everyday reality. (iv) *Market-driven* concentrates on financial outcomes and self-support. Success is measured by the number of participants, and the evaluation is based on students' needs (Tallman, 1992).

3.2.1.3 Open distance learning programmes

Distance Education (DE) is a method of participating in education and instruction where the students are not physically present in traditional classrooms. DE provides access to learning irrespective of distance and time constraints between students and the source of information (NWU, 2013). "Increased emphasis on distance learning is a world-wide phenomenon" (Cronje & Clarke, 1999). In South Africa, OLG was established in 1997 and offers logistical and marketing support to institutions in the education, training and development sector. It is registered with the Department of Higher Education and Training as a Private Higher Education Institution (OLG, 2012). In collaboration with the Potchefstroom Campus of the NWU, it offers opportunities for in-service educators (approximately 24 000 students annually) to upgrade their qualifications through distance education (Kok & Blignaut, 2009). The Unit for Open and Distance Learning (UODL) at the NWU support 56 off-campus tuition centres throughout South Africa and Namibia.

NWU offers the following ODL qualifications: (i) the National Professional Diploma in Education (NPDE), (ii) Advanced Certificate in Education (ACE) and (iii) the BEd Honours degree. The BEd Honours is a specialised study that students may enrol for after the completion of a four-year BEd or an equivalent to 480 credits. The BEd Honours offers four fields of specialisation, namely (a) General Teaching and Learning; (b) Education Management, Law and Systems; (c) Mathematics Education and (d) Learner Support (NWU, 2013). The language policy at NWU is that correspondence is done mainly in English; however, assignments and exams can be written in either English or Afrikaans.

DE faces various challenges, because it "provides support and education for students who are geographically isolated from their facilitators as sources of information and separated from their peers as sources of support" (Makoe, 2010). The greatest problem of DE students is the feeling of isolation that students experience. "Distance is dark...[and] learning at home is lonely" (Cronje & Clarke, 1999), therefore it is important for students to make contact and interact with co-students and lecturers to reduce their isolation. From a lecturer's point of view, they never know whether the students are actually interacting with the learning content, and from the students' side, it is challenging to understand administrative issues. Students should accept responsibility to manage their learning (Cronje & Clarke, 1999). African cultures value collaborative learning because they share learning success with their peers: "Students can feel immediate identification with others in their group and so lose feelings of isolation and over-anxiety" (Makoe, 2010, p. 253).

3.2.1.4 Technology issues

In South Africa, the digital divide is prominent because of the vast differences in living standards between the rich and the poor. Limited access to the Internet and technology, restrained affordability, illiteracy, poverty and social divisions contribute towards the digital divide. It is most evident in technological use, where people are left behind due to their socio-economic circumstances, the imbalances of Apartheid, and language barriers (Blignaut & Esterhuizen, 2011). The digital divide accentuates the differences between the digitally empowered and the digitally disempowered (Muhuro, 2008). Those without access to ICTs become excluded from participating meaningfully in the present information age; struggle to complete tertiary education, or to find profitable employment. The term digital divide can be explained in terms of four aspects: (i) a gap in access to use ICTs—crudely measured by the number and spread of telephones or web-enabled computers, for instance; (ii) a gap in the ability to use ICTs—measured by the skills base and the presence of numerous complimentary assets; (iii) a gap in actual use—the minutes of telecommunications for various purposes, the number and time online of users, the number of Internet hosts, and the level of electronic commerce; and (iv) a gap in the impact of use—measured by financial and economic returns (Fink & Kenny, 2003). In rural areas, these challenges are caused by the limited or absence of Internet access, since the development of digital infrastructure is inadequate. People in rural communities also seem unable to break free from poverty. These two factors cause many schools to have no access to electricity, computers or the Internet (Kok & Blignaut, 2009).

The quality of education in any country determines the ability of its citizens to meet their social and economic needs. For educational systems to grow continuously, facilitators should develop their professional knowledge and skills, be equipped to use educational resources as well as be motivated to do their work and feel satisfied with it (Ololube, 2006). ICT has become an integrated part of literacy. To succeed in today's world, these skills must be fostered. ICT enables the expression of creativity as well as the acquisition and development of higher order thinking skills (Muhuro, 2008).

The use of technologies presents new challenges and opportunities in the learning environment. However, this study postulates that these challenges could be overcome, or at least be reduced. Facebook provides opportunities for students to interact academically, to meet and communicate with classmates and lecturers (De Villiers, 2010). The Internet makes communication easier and more effective for DE participants, especially in a constructivist teaching and learning environment. Cooperative learning, situated learning and supportive measures can be facilitated over distance through the internet (Cronje & Clarke, 1999). The use of mobile technologies as learning tools provides students access to information, communication with one another, and the opportunity to create new information (Maguth, 2013).

3.2.2   Curriculum aspects

The second layer of the conceptual framework (Figure 3.1) relates to curriculum aspects of the conceptual framework for implementing ICT in ODL. It considers (i) *pedagogical* aspects relative to my study, concentrating on incorporating technology into current pedagogies, the influence of the affective domain on learning as well as investigating constructivist teaching methods; (ii) *content* and (iii) *technology* that constitutes the support provided. All these aspects interact to provide support to enhance the teaching and learning environment of rural teacher-students.

3.2.2.1   Pedagogy

Pedagogy is the way in which teaching takes place: how content is presented. Internet-enhanced contexts can enhance learning experiences (Dryden & Vos, 2011; Kukulska-Hulme, 2013). Current pedagogical designs include face-to-face learning combined with electronic learning options to improve the students' physical and intellectual access to learning resources. Mobile technology has distinctive characteristics like learner-centred learning, and students taking part in the learning process (Kukulska-Hulme, 2013). Learning activities which stimulate meaningful collaboration, activate prior knowledge, and transfer relevant knowledge have a positive effect on teaching and learning outcomes (Rambe, 2012).

"Mobile learning pedagogy has produced a multitude of examples and cases showing improvements in learning, and greater engagement on the part of students" (Kukulska-Hulme, 2013, p. 13). Strong pedagogical foundations are essential for the successful transfer of knowledge. Technology can link contexts, bringing authentic examples and problems from the outside world into the classroom as micro-blog posts, photographs and multimedia recordings. Educators strive for more engaged and active students—technology can assist in obtaining this ideal. Traditional education is teacher-centred and learning boundaries are clearly defined within a specific contained curriculum, whereas mobile learning shifts the locus of control to the students and they take responsibility for their own learning. Students establish their learning goals, their learning sites, their information resources, and produce

unpredictable outcomes. It therefore becomes clear that new pedagogical guidelines are required (Kukulska-Hulme, 2013).

The reaction to adapting new education methods vary from person to person: some will embrace, while others will oppose, the change. The continuous evolving nature of technology presents recurrent challenges. Lifelong learning is an "incremental approach, a readiness to acknowledge small breakthroughs of reinvention and change" (Kukulska-Hulme, 2013, p. 14). Technology offers opportunities to experiment with what is really required for effective learning and is available to facilitators and students alike. The pedagogical potential of mobile devices is high, but learning is a complex and diverse activity which will never be completely regulated by a handheld device. Technology devices provide opportunities for students to define their learning in order to pursue their goals and interests. Users should be aware of what their devices can achieve—the device becomes a personal tool to support learning. Such discoveries of the potential of the mobile device can be achieved in collaboration or independently (Kukulska-Hulme, 2013).

Distance Learning (DL) can be viewed as an adventure due to its self-reflective and autonomous nature. Students determine their own pace because they study privately, in preferred locations, and in conjunction with other activities. The immediacy of access to resources inevitably changes the pace of students' learning (Kukulska-Hulme, 2013). Pedagogical activities which take place on SNSs include discussions and collaboration, facilitation of developing a sense of community, encouraging collective intelligence, connecting students with one another, and faculty. SNSs keep students in touch on professional grounds, extends classrooms into real-life situations, and conversational informal learning driven by the students' interests (Chen & Bryer, 2012b).

Students receive course material through stimulating methods, exploring interesting information, connecting to complex real life contexts, delivering information at the right strategic time, as well as adapting and presenting a flexible curriculum in order to meet students' interest. Such course delivery enables students to grasp the content well. Comprehension of the course material leads to intrinsic motivation to learn deeper, and may lead to a passion to learn more. It is important to keep the students motivated and interested in the learning content in order to support their success. A high level of interest focuses attention, which then triggers affective reactions relating to perceived success, which in turn assign positive aspects of self-esteem. Students who engage confidently in their learning, are empowered and successful (Grabe & Stoller, 1997).

In order to motivate students and to keep their interest, learning activities should be stimulating and encourage the acquisition of more complex skills (Grabe & Stoller, 1997). Learner-centred classrooms invite students to learn through doing and to become actively engaged in their learning process. In such cases, teacher dependence decreases as students' own confidence increase. Peer learning and peer interaction are vital in this learning: "Peer learning refers to the use of teaching and learning strategies in which students learn with and from one another without the immediate intervention of a

teacher" (Boud, Cohen, & Sampson, 1999). Students are empowered and are given a voice (Grabe & Stoller, 1997) when the teacher steps aside and hands the responsibility for their learning to the students themselves.

Learner-centeredness is rooted in the social constructivist theory founded by Vygotsky (1896-1934), a Soviet cognitive psychologist. This theory highlights the critical importance of culture and the social context of students for cognitive development. Vygotsky describes learning as a social process and postulates that human intelligence originates in society and in culture where social interaction plays an important role in cognitive development. He explains that learning takes place on two levels, firstly through interaction with others, and secondly, inside a person's own mental structure. Culture provides people with the "cognitive tools needed for development" (Constructivism, 2013). These tools include the cultural history, the language, as well as the social context in which the child is born and raised. In the 21st century, technology can connect students with, rather than separate students from, one another. Technologies provide the tools to implement Vygotsky's theories which focus on the importance of social interaction in the development of cognition. ICTs can support the learning environment through "tools for discourse, discussions, collaborative writing, and problem-solving, and by providing online support systems to scaffold students' evolving understanding and cognitive growth" (Unesco., 2013).

Social-constructivism creates opportunities where students with diverse cultural backgrounds can work harmoniously together, intertwining formal and informal learning pedagogies. The cross-cultural perspective as followed during this study, embraces the concept that learning is a culture-making process which recognises Western thinking as a sub-culture and it engages students *just as they are* and what *their goals* in life are. Social constructivistic mind-sets acknowledge what technology offers to the 21st century; and becomes a new culture that is embraced and expanded. Students have the choice to adopt Western knowledge and value self-directed learning (Naidoo, 2002).

On Facebook, constructivist learning comes alive when students contribute to the group-page and share their learning by explaining to others how they applied their learning to real-life situations (De Villiers, 2010). Constructivism highlights how students, when they learn something new, link it to their existing knowledge and actively become creators of knowledge. In order to do this, they should ask questions, explore and assess what they know (Brooks, 2013). Through engagement on Facebook, these skills can be practised.

Another instructional strategy which supports Vygotsky's constructivist approach is Bruner's readiness for learning and spiral curriculum ideas. These refer to the notion that basic ideas should be revisited continually during an instructional experience, building and elaborating on new levels of understanding and mastery. The building of knowledge should be contextually relevant, organized from simple-to-complex, general-to-detailed and abstract-to-concrete (Theories of Learning in Educational Psychology, s.a.). This blurs the difference between beginning and advanced knowledge. The learn-

ing is through the use of visual aids, text, or symbols. Effective sequencing also allows students to understand better. The spiral curriculum is based on the premises that "students should master certain prerequisite knowledge and skills first in order for the student to develop from simple to more complex knowledge" (Constructivist Theory, 2013). The instructor's task is to translate information to the students' frame of reference, and to present the learning in a spiral manner. The content should be rephrased in various ways until students understand it. Thereafter students should develop skills to discover new knowledge for themselves, an approach that relates to student-centred learning. Students therefore develop a sense of independence and autonomy; they become responsible for their mistakes; they learn in and from real life situations; they develop problem-solving and creative skills, and they discover alternative avenues to obtain information (Constructivist Theory, 2013). Technological devices can support these strategies. The advantages of social constructivist educational methods in learning situations are:

- Group discussions allow students to generalize and transfer their knowledge verbally
- Students are encouraged to test and synthesize, to support their own thinking and to argue their opinions persuasively and respectfully, all of which develop a deep understanding of the learning
- Students' self-determination is tested and a desire to persevere with tasks is nurtured
- Discussions increase students' motivation, collaborative skills and problem solving skills
- Feelings of community and collaboration increase when students get to know one another and talk together. This academic discourse should be practised more often, especially with social technologies and social media that can generate socially constructed knowledge and understanding in online environments
- Students learn more and enjoy it more when they are actively involved in the process of learning, instead of being passive listeners
- Students learn how to think and to understand
- Students learn how to learn in a variety of settings
- Students are given ownership of what they learn, and through engaging creative instincts, they retain and transfer new knowledge to their everyday-life
- Students learn to question things in their real-world contexts
- Students promote an environment of collaboration and natural exchange of ideas—skills that are needed in the real world where they have to cooperate and incorporate the ideas of others (Brooks, 2013).

Scholarly literature on the pedagogical use of social media for learning is not saturated (Chen & Bryer, 2012b; De Villiers, 2010). The use of social media for learning presents a field of research with abundant opportunities for research as much remains unclear in terms of what works, how it works, and in which circumstances (Chen & Bryer, 2012b).

3.2.2.1.1 Affective domain

Technological innovations have infused the learning environment and caused a cognitive explosion between psychology and computers. However, the role of affect in learning has been neglected and researchers now extend cognitive theory to explain and exploit the role of affect in learning in the early stages. Developments accentuate the gap in theoretical understanding between these two aspects of mental functioning, as "affect [is] complexly intertwined with thinking, and performing important functions with respect to guiding rational behaviour, memory retrieval, decision-making, creativity and many more" (Picard *et al.*, 2004, p. 253).

The taxonomy of educational objectives, generally referred to as Bloom's taxonomy, is a framework for "classifying statements of what we expect or intend students to learn as a result of instruction" (Krathwohl, 2002). Learning objectives are classified into three categories, namely cognitive, affective and psychomotor domains (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). The *cognitive domain* (knowing) entails the intellectual or mental skills of a student such as comprehension, recollection, evaluation, analysis and synthesis. The *affective domain* (feeling), involves the emotional aspects of students such as emotions, attitudes, motivation, values, willingness to participate, appreciating the learning experience, and eventually integrating the new knowledge into real-life situations (Gagne, Briggs, & Wagner, 1992). The *psychomotor domain* (doing)*,* refers to manual or physical movement skills of students (Bloom, 1976). Within these domains, attaining knowledge and skills at lower levels precedes learning at higher levels. The domains range from simple to complex and from the concrete to the abstract (Krathwohl & Pintrich, 2002). A combination of interest, attitude and self-view, known as motivation, should be harvested to initiate learning. "For a student to learn a learning task well, he should have openness to the new task, some desire to learn it and learn it well, and sufficient confidence in himself to put forth the necessary energy and resources to overcome difficulties and obstacles in the learning, if and when they occur" (Bloom, 1976, p. 74).

The affective domain describes learning objectives which emphasize feelings, tones, emotions, or degrees of acceptance or rejection. These objectives relate to attitudes, appreciations, interests, emotional sets, values or biases. Variations fluctuate between simple attention to internally consistent qualities of character and conscience (Krathwohl *et al.*, 1964). Affective learning outcomes involve "attitudes, motivation and values…[which] often involve statements of opinions, beliefs, or an assessment of worth", whereas attitudes are described as "learned or established predispositions to respond". Yet, "attitudes are not directly observable, but the actions and behaviours to which they contribute may be observed" (Miller, 2012). Emotional awareness, as part of emotional intelligence, is a learnable skill that makes students aware of their own feelings and attitudes (Picard *et al.*, 2004).

Figure 3.2 presents the categories of the 21st century version of Bloom's taxonomy of the affective domain. The skills in these different categories define the ways in which people react emotionally towards one another as well as the ability of people to feel for one another (Kharbach, 2011).
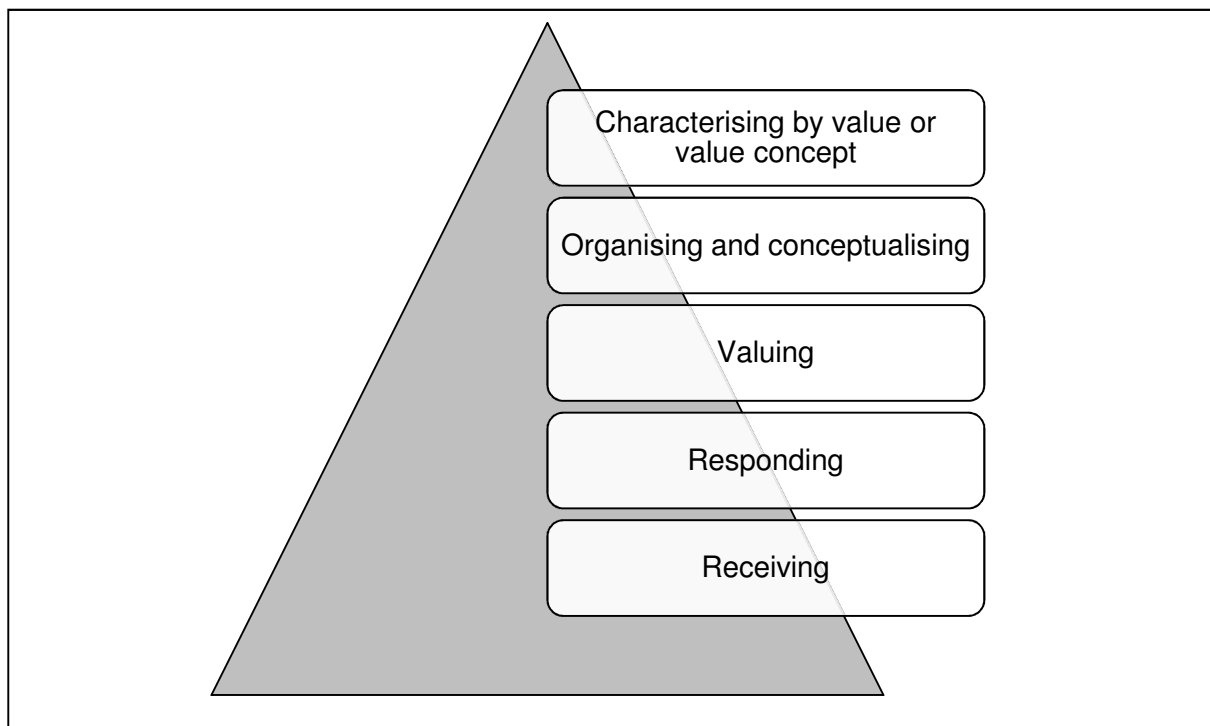
Figure 3.2 **Affective domain of Bloom's Taxonomy** (Kharbach, 2011)

The five affective categories are listed from the simplest to the most complex behaviour and they in-volve the following actions:

- Receiving (willing to listen)

- Responding (willing to participate)

- Valuing (willing to be involved)

- Organizing (willing to be an advocate)

- Characterizing (willing to change one's behaviour, lifestyle, or way of life) (Gagne *et al.*, 1992).

Although motivation plays a large part in the attitude towards learning, the affective domain is not only an area of motivation to learn, it also encompasses attitudes of awareness, interest, attention, concern and responsibility (Bloom *et al.*, 1956) and incorporates the belief system of students (Tooman, 2001). Furthermore, it also includes the way in which experiences are reconciled on the emotional level, such as feelings, values, appreciation, enthusiasm, motivation and attitudes (Bloom *et al.*, 1956). Social learning focuses on the "acquisition of attitudes by observing the behaviour of others and modelling or imitating them" (Miller, 2012). "Social learning is rooted in the person and the culture; it bears fruit through the construction process; it has shoots that branch into new areas, shaping and transforming the community around the learner" (Picard *et al.*, 2004, p. 264). Attitude improves learning, therefore students should understand why the new knowledge should be acquired within their own context (Miller, 2012). When emotional factors are positive, personal transformation takes place more readily (Shuck, Albornoz, & Winberg, 2007).

Bloom *et al.* (1956) maintain that learning at higher levels can only take place after learning on the lower levels has taken place. Three qualities for successful learning are to: (i) use follow-up activities and open-ended questions; (ii) provide realistic examples; and (iii) create arousal through emotional and intellectual involvement (Miller, 2012). The ideal learning conditions demand a learner-centred approach, an environment which encourages a sense of safety, openness and trust that stimulates alternative personal perspectives, and problem-posing and critical reflection (Tooman, 2001). Fundamental characteristics of human thought are: (i) "it always takes place in, and contributes to, a cumulative process of growth and development; (ii) it begins in an intimate association with emotions and feelings which is never entirely lost; and (iii) almost all human activity, including thinking, serves a multiplicity of motives at the same time" (Picard *et al.*, 2004).

The digital age should explore connections between technology and human factors in order to foster learning on four levels of relation building: (i) the intensity of the engagement; (ii) the quality of the engagement; (iii) the creation of positive emotions and attitudes; and (iv) the social side of affective learning. The intensity of engagement should be higher when technology challenges the student, but it should not overwhelm them. Students affectively construct engagement in order to explore knowledge and discuss it with others, because the way they feel about acquired knowledge impacts what they will do with it or reflect on it, and this, in turn, effects the growth and connections to new knowledge. The strongest relationships are formed when knowledge is represented as concrete activities on virtual entities like computers. This is different from the traditional learning methods. The new methods focus on affective forces when connections are made with the physical world around the students. Positive emotions and attitudes trigger energy for students to involve themselves in during new learning experiences. The social side of affective learning shows that learning is entrenched in people and their culture, and this shapes and transforms the students' community in which they function in order to "better understand emotion, motivation, attention, comfort, community and the culture" (Picard *et al.*, 2004). Digital collaboration and support assist in the construction of knowledge because discovery, adapting to preferences and awakening of creativity in a personal way makes learning personal.

The interaction between learning and emotion should be understood from a constructivist perspective (§3.2.2.1) as it presents a unique opportunity to appreciate the learner and the construction of knowledge through experience (Shuck *et al.*, 2007). "An emotion is a subjective reaction or feeling. Remembering experiences, an individual recalls not only events but also the feelings that accompanied them. Thus when people communicate, they convey emotions as well as facts and opinions" (Hellriegel & Slocum, 1996, p. 500). "Emotion is the on/off switch of learning" (Vail, 2013). Negative emotions drain students' intellectual energy and capacity. When people are "faced with frustration, despair, worry, sadness or shame, they lose access to their own memory, reasoning, and the capacity to make connections" (Vail, 2013). When emotions are not stimulated, boredom sets in and no sustained learning takes place (Tooman, 2001). The limbic system, which is the emotional brain, is able to allow or disallow learning to take place, to remember what is learnt and also to make new connec-

tions with old knowledge (Vail, 2013). "Emotion serves as a cognitive guide and helps adults make decisions every day" (Shuck *et al.*, 2007) and is part of all learning processes. Furthermore, emotions either obstruct or assist learning as emotion is "an affective state of consciousness in which joy, sorrow, fear, hate, or the like, is experienced, as distinguished from cognitive and volitional states of consciousness" (Dictionary.com, 2013). Previous experiences determine the emotional state of students when they encounter new learning experiences. "Emotion plays a critical role in the construction of meaning and knowledge of the self in the adult learning process" (Dirkx, 2008). Therefore, emotions adjust thought patterns in adults: "When adults learn anything under any circumstances, their emotions will be involved" (Wlodkowski, 1999). It is essential to stimulate the affective domain in adult education in order to develop meaning and to apply knowledge (Tooman, 2001). Emotions are the filters that control a person's self-esteem (Wlodkowski, 1999). "Learning is enhanced through high self-esteem and low anxiety: having a positive attitude towards learning, it is shared through emotions, values and beliefs in a group where learning takes place from one another through active engagement" (Esterhuizen, Blignaut, Els, & Ellis, 2012).

"Today's knowledge is tomorrow's unawareness" (Drucker, 1998). Adult students should sharpen and renew their skills continually to meet the challenges each day presents. Emotional transformation enables students to accept challenges and change. When emotions and learning blend in a learning environment, knowledge acquisition is stimulated (Shuck *et al.*, 2007). Emotion is seen as the framework which adults use to make meaning of knowledge, allowing them to express personal values. Emotion refers to the self. When students understand how these dynamics operate, it increases their self-knowledge. The setting wherein learning takes place is also important. Adult students may feel threatened in classrooms and this vulnerability inhibits learning, thereby blocking or delaying the acquisition of important concepts.

Learning should work its way "from a simple awareness of a value to a highly integrated internalization of value systems…progressing from neutrality through mild emotion to strong emotion…from lack of consciousness to a valued conscious awareness to an unconscious incorporation into one's life and actions" (Tooman, 2001). When attitudes change as a result of knowledge, it could also change the outcomes of learning. Therefore, change in attitude is regarded as a performance indicator when it synchronizes knowledge and affect (Miller, 2012). Dirkx (2008) describes learning as "a process that takes place within the dynamic and paradoxical relationship of self and other." True transformation demands full integration of the person's mind, body, spirit, emotions, relationships, and socio-cultural context (Tooman, 2001).

3.2.2.2 Content

Content refers to sections of learning which students and facilitators engage with, using chosen technology and pedagogy. Content is "the use of subject matter as a vehicle of teaching and learning" (Grabe & Stoller, 1997). Understanding of content can be enriched through the academic use of Fa-

cebook within the context of each individual student (Kayri & Çakir, 2010; Petrović, Petrović, Jeremić, Milenković, & Ćirović, 2012). Facebook offers facilitators the opportunity to deliver the content just-in-time and not only just-in-case (Nagel & Verster, 2012). The facilitator's task in an online environment is to guide students to organise their learning (Cronje & Clarke, 1999) in order to take control and responsibility of their learning.

3.2.2.2.1 Blended learning

An effective way of delivering academic information is through blended learning, such as face-to-face learning activities integrated with online resources and interaction, which ensures the delivery of learning to students wherever they are—on or off campus. During face-to-face sessions, a lecturer facilitates lectures, seminars, tutorials, and group work. Learning technologies enhance these activities through resources available on the Web, discussion forums, e-mail communication, as well as through the sharing power of social networks (Nel, 2011).

Blended learning has different meanings to different people and scholars suggest it should rather be called multimodal learning. Many are unsure about what or how the nature of the blend (mix) of strategies should be for success. In general, the nature of a course determines the mix of strategies in order to deepen the learning experience (BASE, 2013).

Mobile technologies can successfully support blended learning. Incidental learning is a positive added value of using mobile technologies as they are an "important type of learning alongside other current approaches and theories" (Kukulska-Hulme, 2013). "The pedagogical potential and benefits of online social networking is an emerging trend found in higher education" (Visagie & De Villiers, 2010). Learning technology tools are needed to foster blended learning and can be described as:

> A tool for learning, such as a computer (electronic device), which serves as an information processor, must be closely parallel to the learning process. The objective of linking knowledge and navigating through information, can be achieved by using the Internet because it then becomes an ideal learning environment (Cronje & Clarke, 1999).

The predictions are that people will be enabled to work, learn and study whenever and wherever they want, and that access to data and information will become easier. The paradigms in education are shifting towards the inclusion of online learning, hybrid learning as well as collaborative models. Online learning became an alternative and a supplement to the traditional university courses (Johnson *et al.*, 2013).

3.2.2.3   Technology for teaching and learning

We are already living in the future where mobile learning opens new types of knowledge acquisition. Students become adventurous, self-reflective, and autonomous as they self-pace learning in preferred locations and alongside other activities. Mobile learning is seen as a supplementary activity to traditional teaching, but this will change in the future (Kukulska-Hulme, 2013). "We must harness the po-

tential which technologies bring to the learning and teaching environment because they will continue to grow in their functionality and capability" (Maguth, 2013, p. 90). Avoiding the use of these 21st century learning tools deprive students of the advantages of accessing instantaneous information, communicating anywhere, and presenting information in exciting new ways (Maguth, 2013). The effects which technologies have on the way people communicate, write or relate to others, should not be underestimated (Makoe, 2010). "Society is moving toward electronic textual communication. Many prefer text messages on a mobile phone or an e-mail to a phone call" (De Villiers, 2010, p. 183).

Some predictions are that by 2020 education will move on from the *mobility era* to the *ubiquity era*. It is important to remain aware of technological innovations because of their ever improving nature. Role players should understand how technological systems work—especially in the educational curricula, from junior to higher education spheres (Kukulska-Hulme, 2013). Technology has redefined business, communication and support. The integration of mobile devices in learning environments can assist students to gain the skills and etiquette required to use technologies meaningfully in their working lives (Maguth, 2013).

Real-world simulations make situated learning more meaningful and keep students interested in their learning material (Nel, 2011). Technology must be employed to "improve, support, or extend teaching, learning, and creative inquiry" (Johnson *et al.*, 2013, p. 4). Technology refers to the equipment, machinery, tools, know-how, knowledge and skills about devices people possess or use to make life and living easier. The term *mobile technology* includes both mobile or hand-held devices (for example, amongst others, cellular phones, smart-phones, i-Pads, laptops) as well as wireless communication networks (data bundles, Bluetooth, and Wi-Fi) (Mayisela, 2013). Digital media platforms, such as Facebook, have an impact on our entire lives, and they have become both a threat and an opportunity to the traditional media (Majavu, 2013).

"New technologies offer new educational opportunities, and the increasing availability of affordable mobile devices, in particular mobile phones, allows the educational benefits to be available in communities that have hitherto not had access to those new technologies" (Laine *et al.*, 2011). For many people, technology is part of their everyday life and entrenched in their learning experiences. In most cases, mobile technologies and the Internet have become the primary method which people use in order to stay in contact and collaborate with one another (Ostashewski *et al.*, 2013). When mobile technologies are used in education, they provide students the opportunity to undertake "user-led education" (Mayisela, 2013, p. 2), constructing their own knowledge, collaborating with peers and forming learning communities. Thus, students are interacting with one another beyond the classroom as well as in conventional classroom-set-ups. It is important that facilitators play a meaningful role in guiding students in the "most effective use and holistic understanding of mobile technologies" (Kukulska-Hulme, 2013, p. 16). Cellular phone-based activities, resources and strategies can advance students' learning. Any situation can be used as a "teachable moment and an opportunity to build community

and encourage the sharing of resources" (Maguth, 2013, p. 87). As more students gain access to and use mobile devices for learning, they can learn anywhere and at any time.

Facilitators should be open to the interests and experiences of all students, creating environments which are conducive to meaningful learning and enabling partnerships to develop between facilitators and students. When new technologies are used in learning situations, students can get excited by tapping into their cultures and digital interests. Cellular phones serve as platforms to excite and engage students in meaningful and relevant learning. This challenges facilitators' technological pedagogical content knowledge (TPAK). The question is whether facilitators are ready for integrating technology into their classes. Learning with technology is still the *sleeping giant* (Maguth, 2013) in education.

The socio-cultural and contextual backgrounds of students influence learning with learning technologies. Disadvantaged students with limited exposure to technology cannot ask relevant questions about technology as they do not possess the vocabulary to express their thoughts meaningfully. They also do not understand the value of technology for their education as they have no or little experience with the Internet (Rambe, 2012). Mobile learning therefore holds untapped potential for learning environments. Students probably own more cellular phones than laptops or other digital devices as low-income households generally do not own computers. However, cellular phones have more computational power than many computers and they are able to access the Internet (Maguth, 2013, p. 88). Barriers to the acquisition of learning technology devices include unaffordability, technical barriers, connectivity issues, and device unreliability. These factors undermine aspiring educational goals (Kukulska-Hulme, 2013).

Mobile technologies impact on how people communicate, write and relate to one another (Makoe, 2010). Technological devices break down barriers between informal and formal learning (Chen & Bryer, 2012b; Kukulska-Hulme, 2013). Interaction on a social network site like Facebook mostly takes place in an informal and a relaxed style. Using cellular phones in a learning environment can provide learning material, allow social integration and enable participation and interaction of students with the learning content, with one another, as well as with the facilitator. Students express themselves in ways in which they feel comfortable while learning and having fun (De Villiers, 2010).

In rural South Africa, the fixed telephone network (TELKOM) is by-passed and most people use mobile phone networks. Rural areas have leapfrogged from a population with telephones to one with mobile phones within two decades (World Factbook, 2013). This means that wireless learning with technology is dominant (Mayisela, 2013). Mobile devices are seen as a solution to the shortage of computers for students. Unfortunately, the technological divide "will not disappear for a long time to come" (Kukulska-Hulme, 2013, p. 16). But this should not allow us to be side-tracked from the Action Plan 2014 of e-learning initiatives (South African Government Information, 2013) in the various provinces which the DBE wants to implement. Tablets are taking the educational world by storm, but

South Africa is lagging behind. The slow progress is mainly caused by decision-makers who ignore the role of technology in education. The challenge is ever-changing because the laptops of yesterday and the tablets of today will be out-dated by tomorrow. Educators must learn to use various devices, experience the different options first-hand and familiarise themselves with the affordances of technology. When they experience difficulties, they could ask a learner for help (Bozsik, 2013).

Learning with mobile devices provides (i) "additional channels for communication and collaboration, (ii) facilities for context-inspired content creation, (iii) location-specific learning, and (iv) augmentation of a person's surroundings through extra layers of visual and audio information automatically triggered or delivered on demand" (Kukulska-Hulme, 2013, p. 12). Even if students have only a little time at their disposal, they can log onto the academic platform and use time effectively. The access to educational resources and ability to join networks and conversations is an appealing combination and a winning formula. Mobile devices can have a "positive impact on education by facilitating student learning, helping facilitators to do their job more effectively, and enabling the development of education systems across the globe" (Kukulska-Hulme, 2013, p. 12). Mobile technology can be seen as a solution to the shortage of computers for students (Mayisela, 2013). The situation wherein people have been neglected and/or excluded from education can be rectified in a short space of time, by using technology. The advantage of online courses that allow continued, advanced learning at lower cost is that they make the improving of skills and knowledge more accessible to people who have embraced the notion of being lifelong students (Johnson *et al.*, 2013).

The challenges that technology poses relate to (i) academics are not optimally using technology in their teaching and learning, (ii) inadequate training opportunities, (iii) the paradigm shift that these emerging tools are teaching and learning tools, and (iv) the practical use of technologies for personalised learning is not possible until the devices, practices and procedures for teaching and learning are available to students (Johnson *et al.*, 2013). Facilitators should become familiar with technology-based learning in order to guide students to the required levels of expertise. In rural schools, budgetary constraints pose additional barriers as computers, software, printing, and connecting to the Internet are expensive (Masters & Oberprieler, 2003).

Young students are immersed in and obsessed with technology as they are part of the "mobile-connected-internet-global-village generation" (De Villiers, 2010, p. 183), constantly in search of the latest techno-craze. For them, Facebook is a comfort zone. The not-so-young experience barriers, i.e., registering and logging in to the Facebook website. Such students could be registering for the first time as Facebook users. Their concerns about security issues should be addressed (De Villiers, 2010).

"A small device, added in the midst of a learning activity, can become a catalyst for change" (Kukulska-Hulme, 2013, p. 13). Cellular phones increase collaboration between course participants and become an instrument for changing known pedagogical designs and the effect thereof would not

be immediately apparent. Mobile devices provide exciting opportunities to resolve global problems in educational spheres as many people in work situations want to upgrade their qualifications and become full-time students.

Mobile devices are intelligent companions that link individuals to the wider world and therefore are becoming key factors in academic settings (Johnson *et al.*, 2013). Students can monitor their own learning, diagnose weaknesses and discover their learning styles. Learning becomes more mindful and information is retained better. Acquiring information through these 21st century devices, students become actively involved and engaged, and are able to define their goals and solve their problems effectively while "tap[ping] into rich social networks for collaboration and help" (Kukulska-Hulme, 2013, p. 15). Technology-enhanced learning can be experienced in diverse ways:

- e-Learning that takes place through interactive networks and computers
- Web-based and online learning through web browsers to websites
- Mobile-learning devices, usually wireless, that enables learning anytime anywhere
- Electronic learning material can be delivered verbally or visually through a range of devices (Nel, 2011).

3.2.2.3.1 Social media

Social media or Web 2.0 technologies are tools for sharing objects between interconnected groups or networked people (Ostashewski *et al.*, 2013). This interconnectivity enhances group participation as knowledge can be shared as "mediated intellectual engagement" (Rambe, 2012, p. 1333). Social Networking Sites (SNS) are "web-based services that allow individuals to construct a public or semi-public profile within a bounded system; articulate a list of other users with whom they share a connection; and view and traverse their list of connections and those made by others within the system" (Boyd & Ellison, 2007). Social media has been named as one of the technologies that are impacting the Australian tertiary education scene profoundly and will keep on doing it for years to come (Johnson *et al.*, 2013). SNSs are the order of the day and are here to stay (Brown, 2007).

Students often spend most of their free time on social media, and therefore it could become a valuable resource for academic purposes. Facilitators can now reach students "where the students are" (Boyd & Ellison, 2007). Social media are becoming more prominent in academic environments (Wright, White, Hirst, & Cann, 2013). It is therefore important to understand what motivates students to interact with social media in order to increase student engagement with academic content. SNSs should be seen as a feature and not a destination as they provide popular platforms to showcase user-generated content like pictures, videos, text and any other applications. SNSs also provide opportunities for sessions online, for blended collaborations as well as student-to-student contact (Ostashewski *et al.*, 2013).

The University of Oxford indicated that students behave differently when participating on the social media networks, from when they use other academic learning tools. Students who use the Internet as

a functional medium were labelled as *Visitors,* while those who regarded the Internet as a social space, as *Residents. Residents* felt that online tools were more useful academically than the *Visitors* perceived them to be (Wright *et al.*, 2013).

3.2.2.3.2 Facebook

Facebook, an SNS, connects people, enabling them to interact with one another through a constantly evolving set of networks (Brown, 2007; Noble, 2009). Facebook integrates a variety of tools, such as chat tools, discussion boards, image galleries, videos and audio-recordings, and others (Chen & Bryer, 2012b; Noble, 2009; Sellers, 2013). Facebook allows interaction between people on a virtual platform which is user-friendly, supports flexible communication and offers many opportunities for in-teraction (Canada30, 2013; Chen & Bryer, 2012b; Rambe, 2012; Sellers, 2013; Sproutsocial, 2012).

Since the inception of Facebook usage at Harvard University in 2004, it has expanded to approximate-ly 800 million subscribers worldwide in less than ten years (Kayri & Çakir, 2010; Petrović *et al.*, 2012; Sproutsocial, 2012). There are currently over one billion active users of Facebook Sellers (2013). One million new registrations are recorded per week (Canada30, 2013). On 11 September 2006 Fa-cebook became available to anybody over thirteen years of age and who had an e-mail address (Gouws *et al.*, 2012, p. 237). With so many people interested in Facebook, its presence is a reality that cannot be denied, also for use in academic environments (Sellers, 2013). Technology is shaping the lives of students outside and inside the classrooms, and is instrumental in merging academic and social facets of their lives. Students are willing to use SNSs like Facebook to enhance their course-work, thereby taking social media to new levels (Rice, 2011). Tables 3.2 and 3.3 illustrate the global and African uptake of Facebook.

Table 3.2: **Sample of countries using Facebook in Global context (Socialbakers, 2013)**

World Ranking	Countries on Facebook	Number of users	Penetration
1	United States	163 071 460	52.56%
21	Australia	11 677 680	54,28%
32	South Africa	5 534 160	11.29%
41	Algeria	4 322 820	12.50%
50	Denmark	2 995 800	54.63%

Table 3.3: **List of the large Facebook users across Africa (Socialbakers, 2013)**

African Ranking	Countries on Facebook	Number of users	Penetration
1	Egypt	13 010 580	16.17%
2	South Africa	5 534 160	11.29%
3	Nigeria	5 357 500	3.48%
4	Morocco	5 250 340	16.60%
5	Algeria	4 322 820	12.50%

Although South Africa is the second largest Facebook user in Africa and 32nd largest in the world, there is still a large portion of the South African population not participating in Facebook.

In the 21st century, society and technology are mutually dependent (Petrović *et al.*, 2012). Technology is ubiquitous and it embraces almost every part of our lives, our homes as well as our communities as it affects the lives of millions of students of all ages (Chen & Bryer, 2012b; Petrović *et al.*, 2012; Vota, 2010). Wireless connections are called *new schools* (Coklar, 2012) as they are "changing the face of modern education" (Sproutsocial, 2012). The academic use of Facebook has opened a global educational world on which the "sun never sets" (Sproutsocial, 2012). While Coklar (2012)'s participants call the academic use of Facebook *Facelearning* education, Selwyn (2009) refers to it as *Faceworking*.

Those who share in the academic use of Facebook benefit from easy communication and collaboration, sharing of ideas, solving of problems, explaining of academic work, indicating misconceptions, as well as critically reading and challenging one another in order to reach higher levels of excellence (Mayisela, 2013). Both Mayisela (2013) and Sellers (2013) describe the academic use of Facebook as asking questions that were not asked in class; improving participation of more students; sharing information and mentoring one another as well as being in contact with a lecturer outside the classroom. All students can be kept up to date with the latest information in order to enhance an environment conducive to teaching and learning. Facebook spreads information fast, excites interest, motivates and offers opportunities for interaction(Chen & Bryer, 2012b).

There is also a negative side to the use of SNSs like Facebook for learning: they are too closely linked to entertainment, difficult to control, and could lead to information overload (Coklar, 2012). Njenga and Fourie (2010) refer to the "euphoria towards e-Learning" and suggest that one should consider the "gap between rhetoric in the literature (with all the promises) and actual implementation" thereof. Technology is advancing much faster than educational research can cope with (Guri-Rosenblit, 2005; Njenga & Fourie, 2010). However, there are other stumbling blocks as well. The human factor is the most pertinent—people often resist change. Therefore, face-to-face delivery and classroom instruction will not easily be replaced by technologies. Technical difficulties also prevent students from gaining benefits from the use of technology (Lárusson, Þórólfsson, & Macdonald, 2008). With most aspects of life connected to the Internet, people should be aware that they only share personal information which they feel comfortable to divulge. This usually relates to passwords, email addresses, physical addresses, and other vital personal information (Noble, 2009).

Facebook is both entertaining and a useful learning tool (De Villiers, 2010). The ability of Facebook to integrate the "always on" characteristic of cellular phones is a major benefit. It enables students to browse, upload photos, and communicate through text messages (Brown, 2007). Facebook can be seen as a social tool for the youth. Older users, who have never used Facebook, found it difficult and could not use it intuitively. However, as users broke through initial barriers, they became more positive and shared how Facebook changed their ways of engaging with technology. Younger students were keen and positive about the inter-connectedness (De Villiers, 2010).

3.2.2.3.3 Academic use of Facebook

The educational potential of Facebook relates to its reflective qualities, peer feedback, collaboration, revision, organising of groups and answering questions regarding course content and administrative issues (Nagel & Verster, 2012). The resulting cohesion between students supports both social and cognitive engagement (De Villiers, 2010). Facebook provides a means to share personal challenges, as well as an opportunity to reflect. Therefore academic use of Facebook provides opportunities *just-in-time* and *just-for-me* for reflection on social and support issues (Nagel & Verster, 2012).

The academic use of Facebook has become a topic of debate amongst academics on which, at present, no consensus has been reached (Kennan, 2009). In the meantime, there is no doubt that the so-called super powers of Facebook can be harnessed for educational purposes and that it can be used as a vehicle to enhance students' learning experience in blended learning environments (De Villiers, 2010; Kennan, 2009). It allows users to use a range of tools to negotiate and inhabit online networks and therefore it plays an important part in the development process of learners and learning material (Kennan, 2009). Selwyn (2009) supposes that SNSs like Facebook allow communication and correspond in an electronic way with face-to-face social learning contexts at on-campus institutions. He suggests that the conversational and collaborative potential of SNSs should be tapped for academic purposes. He also points out that SNSs can be used educationally to support communication between students in the same learning situations and also for educator-learner dialogue during informal and unstructured learning.

The primary use of Facebook is non-academic, and the value of using Facebook in formal teaching and learning environments is still unclear (Siemens, 2008). One of the pitfalls of the academic use of Facebook is that students should be mindful of posting detailed activities that are not conducive for facilitators to see. Likewise, sensitive subjects should be handled with suitable care. Equally important is the tendency to communicate in informal language, though a respectful tone should still be maintained (Sellers, 2013). USA and UK studies indicate that participants on SNSs spend more time viewing the content of the posts (they were not participating, mostly due to a lack of confidence), rather than contributing new postings (De Villiers, 2010). Some students have not accepted the general culture of visiting electronic sites regularly to keep in touch with the information of the academic site. When they do not log on regularly, they easily fall behind with the learning material, which could eventually lead to the dropping out from the module (Cronje & Clarke, 1999). For the developing contexts of South Africa there are no guidelines to assist technology illiterate ODL teacher-students in rural areas on the use of social media to enhance their learning experience.

The most successful way of utilising Facebook as an academic platform, is to create a private group page where students with common interests can be brought together to communicate with one another and with a facilitator (Kennan, 2009) (§ 2.5). Such groups build a sense of community among stu-

dents (Sellers, 2013). The aim of the group feature is to support discussions on topics, to promote interaction between peers, and to debate issues of current interests in private space (De Villiers, 2010). Facilitators design and administrate groups according to specific goals and invite members to the group (Coklar, 2012). Such a platform can then be used as frequently as needed and questions can be posed or addressed quickly (Mayisela, 2013). Interactive groups stimulate common academic interests, which include the sharing of resources. Another feature is the ability to make comments on peers' pages, write personal reflections, and discover how peers interpret different topics. Intellectual conversations are inspired by using different interactive web-spaces, such as private inbox conversations, wall postings as well as forum discussions. A community of learning is established where group members discuss, provide ideas, suggest appropriate approaches, share feelings and thoughts, as well as reflect upon experiences. This form of situated learning is presently gaining popularity (Aase, 2009; Canada30, 2013; Herrington & Oliver, 2000; Stern, 2013). Facilitators and students do not have to be Facebook friends before joining a group. This enables a division between academic and social lives (Stern, 2013).

3.2.3 Strategic principles

The third consecutive layer of the framework (Figure 3.1) relates to strategic principles. All the principles within the conceptual framework (Figure 3.1) are interconnected, but I focused on: (.i) coaching and scaffolding; (ii) collaborative construction of knowledge; (iii) articulation of content specific language; and (iv) reflection opportunities, as they were relevant to my study according to the context of the participants.

3.2.3.1 Coaching and scaffolding

Rural students experience logistical problems in terms of learning such as being far away from contact centres, facilitators, and peers. Through coaching and scaffolding, students are enabled to acquire knowledge independently after an introduction by a facilitator. Facilitators should be available to assist students when they need them in order to build onto their own structures and develop confidence in their learning. Scaffolding involves the intervention of experts or knowledgeable peers in order for novices to reach independence. "Human agents [instructional support], symbolic tools [texts and symbols] and technological tools [Facebook applications, interactive pages, queries, questions, and answers] potentially scaffold students in meaningful learning in SNSs" (Rambe, 2012, p. 1336).

Coaching and scaffolding relates to the *just-in-time* and *just-for-me* support an expert provides to students as required (Nagel & Verster, 2012). It also links to Vygotsky's theory of Zone of Proximal Development (ZPD)—the "distance between the [student's] actual developmental level as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance and in collaboration with more capable peers" (Puntambekar, 2013). Coaching and scaffolding assist students to bridge the gap between their actual and potential

knowledge until common goals are reached (Puntambekar, 2013). The academic use of Facebook is suited to coaching and scaffolding students' learning as it provides for reflection, review of others' work, access of information, blogging, and opportunities for discussion (Nagel & Verster, 2012). For coaching and the scaffolding of learning to be effective on Facebook, the facilitator and students should take cognisance of the variety of teaching and learning styles, and of techniques and skills for effective teaching and learning. Also, how personal development can take place through the use of SNSs. Coaching and scaffolding is a process of relationship building between participants, as well as the setting of goals to enable students to achieve their potential (Corporate Training Materials, 2013).

Coaching begins when a relationship of trust and commitment between people is formed which is "useful and powerful when you are up to something that is a challenge…to assist you to be the best you can be" (Hunter, Bailey, & Taylor, 1998, p. 89). It becomes a powerful partnership that enables people to do what would have been impossible to achieve on their own (Hunter *et al.*, 1998). When scaffolding is practised, participants' engagement is essential to aid them in making the most of the learning opportunity. They have to gradually learn how to engage with one another and the learning material presented to them. The facilitator and student(s) together set goals for the intended learning. Support to the students is gradually reduced; enabling them to take control of and assume responsibility for their learning. Successful scaffolding will enable students to internalise their learning (Salmon, 2000).

The implementation of coaching and scaffolding methods are complex. Facilitators experience difficulties to allow cognitive presence to fully develop, and uncertainty brings about frustration and anxiety. Facilitators should not prescribe to students how and what they should learn, especially when they reach the stage where they accept responsibility for their learning. Soft scaffolding is often required, especially in blended learning environments where students are not skilled in the use of learning technology (Arbaugh *et al.*, 2008). Bruner's theory of spiral curriculum and discovery learning seems an effective coaching and scaffolding method (Theories of Learning in Educational Psychology, s.a.) (§3.2.2.1).

3.2.3.2 Collaborative construction of knowledge

Collaborative learning takes place when students work together in search of meaning, a deeper understanding and finding solutions to a specific academic problem. This fosters increased interest, critical thinking skills, and communication skills (Makoe, 2010). Collaborative construction of knowledge in learning and teaching promotes a "positive sense of social inclusion" (Hakkarainen *et al.*, 2007). Collaborative learning and teaching is part of Vygotsky's theory that suggests that "students are capable of performing at higher intellectual levels when asked to work in collaborative situations than when asked to work individually" (Gokhale, 1995). Technology-enhanced learning enables students to collaborate as a team when they are physically apart (Dryden & Vos, 2011, p. 55). The academic use of Facebook becomes "collective learning in a shared domain" that diminishes the constraints of not

communicating face-to face with one another (Wenger, 2006). This is a dynamic process that involves the participation of everyone involved. Pooling of skills, knowledge and resources enables students to move toward the common goal of academic success. Students become responsible for their own learning while also contributing towards one another's learning.

Gokhale (1995) found that (a) with collaborative learning students developed a better understanding of the learning material; (b) learning collaboratively stimulated students' thinking; (c) shared responsibilities diminished students' anxiety; and (d) students spent much time explaining learning to others. He concluded that collaborative learning fosters the development of critical thinking through discussion, clarification of own ideas and the evaluation of others' ideas. Students communicate in order to express themselves, to share information, and to learn. Through acculturation, they interact, define problems, and take on new challenges (Renninger & Shumar, 2002).

Coaching is a relationship based on trust, respect and a positive connection between people where both parties give and receive within a nurturing environment. A coach has skills, experience and understanding of situations needed by another. The receptive and appreciative mentor perceives the participant's skills, abilities and potential to learn. The coach shares experiences, offers suggestions and provides advice, but also provides a helping hand, and shows ways of gaining knowledge and experience. Coaching mostly takes place in informal settings (Hunter *et al.*, 1998, p. 97). Coaching involves different activities, such as planning lessons and activities with the student; allowing students to try out new strategies; practising new skills in a supportive environment; debriefing the student by asking questions; assisting in the analysis of actions; and providing support and new challenges (Bozeman & Feeney, 2007). "[Coaching] is to support and encourage people to manage their own learning in order that they may maximize their potential, develop their skills, improve their performance and become the person they want to be" (Parsloe, 2008).

On Facebook, opportunities are available where peers coach and scaffold one another (Herrington & Oliver, 2000). Dual enrichment takes place where classroom interactions complement Facebook interactions and vice versa (Jabr, 2011). When students are in contact with one another through technology, they create a virtual community of learning where people with similar needs connect with one another as part of a dedicated group. Cooperation takes place when they assist, support and motivate one another during learning in authentic contexts while participants discuss, provide ideas, suggest approaches, share feelings and thoughts, as well as reflect on learning experiences (Herrington, 2006). If SNS technologies are introduced innovatively and user-friendly, an inviting environment emerges where students collaboratively assist in one another's professional development. These aspects relate to situated learning wherein students support one another and are supported by mentors (Herrington & Oliver, 2000).

3.2.3.3 Articulation of content specific language

When students are not learning in their home language, it becomes difficult to understand concepts and they are unable to express themselves through using the foreign terms used in the learning material.

Social media has highlighted the use of home language. Ngcukana (2012) maintains that SNSs have influenced the isiXhosa youth to drift away from the use of their home language towards using English. He points out that the isiXhosa middle class people are "killing the language...[because]...they look down on their mother tongue". The predominance of English is a limiting factor in the South African context when working with the older generation. Despite the multilingual nature of the South African context, most communication on Facebook is "found to be in English, with students (including non-native speakers) considering this the obvious choice of language for the medium" (Bosch, 2009). SNSs and face-to-face sessions are opportunities for teacher-students to develop their skills to express knowledge of academic nature in their home language or language of choice (Kruger, 2012). Academic literacy encompasses the ability to read, write, perform arithmetic calculations, as well as being technologically competent (Mayisela, 2013). Students learning in non-mother tongue languages experience barriers in expressing themselves appropriately in academic terms, therefore opportunities should be constructed in a manner that encourages the use of content specific terminologies to enable students to familiarize themselves with the relevant terminology.

3.2.3.4 Opportunities for reflection

While the use of Facebook mainly relates to social interaction, some benefits may assist learning. Facebook could also serve as an information repository, enable the writing of blogs, and facilitate discussion forums that provide opportunities for reflection on and reviewing of learning (De Villiers, 2010; Nagel & Verster, 2012).

Reflection on learning involves reflective thinking—looking back, analysing an event or idea, or thinking about the meaning (Hampton, 2013). Hakkarainen *et al.* (2007) holds that the concept of self-directed learning is interwoven with reflection. "Self-reflection [is] crucial forms of self-regulation and self-assessment" (Loyens, Magda, & Rikers, 2008). Good reflection practices contribute towards better academic achievement (Loyens *et al.*, 2008). When students become competent in reflecting, they attain academic achievement because reflective writing is evidence of reflective thinking (Hampton, 2013). It is important for all students to critically review their learning. Reflective writing encourages individual accountability when individual progress can be monitored. In SNSs, electronic reflective journals can be read, be discussed and the student can receive suggestions on how to improve learning methods and strategies. The virtual community's effectiveness can also be discussed and analysed (Keppel, Au, Ma, & Chan, 2006).

3.2.4   Criteria of excellence

The fourth consecutive layer of the conceptual framework (Figure 3.1) depicts the criteria to which the use of technological devices should adhere in order to support affective learning experiences of rural teacher-students. Participation will be explained according to aspects like mobility, networking, inter-activity, personalization, flexibility, and accessibility.

3.2.4.1   Participation

Participation in SNSs ensures that all students are involved, make contributions and take part in learning. The more frequently students participate in the SNS, the more they interact with their learning and one another, and the richer the learning environment becomes. Active and hands-on participation breeds a will to succeed at higher levels (Chen & Bryer, 2012b).

Participation on SNSs brings learning into informal settings that are accessible to all. Informal learning is increasingly becoming important as web-technologies allow learning to take place *anywhere and at any time (Chen & Bryer, 2012b; Makoe, 2010).* Acquisition of knowledge occurs readily when students informally connect with learning content in settings that are "subtle and complex", but beneficial to articulate learning content in own words (Ravenscroft, Schmidt, Cooke, & Bradley, 2012). SNSs are changing the way students learn as students are able to work inter-actively (Chen & Bryer, 2012b). Participation on SNSs enables learning through a "process of knowledge maturing" (Ravenscroft *et al.*, 2012). SNSs enable students to engage with educational contexts in new and meaningful ways beyond traditional classrooms, and thus blur the lines between informal and formal learning. When students participate on SNSs like Wikipedia, students are exposed to the creation of formal knowledge (Chen & Bryer, 2012b; De Villiers, 2010).

Participating in an online environment requires a high degree of self-discipline as the responsibility of transitioning to and adjusting in the new roles are demanding. The added responsibilities include adjustments such as:
- "knowledge about, skill with, and acceptance of the technology
- new modes and amounts of communication with instructors, peers and administrators
- increased levels of learner self-direction
- a new place for learning (anytime, usually determined by the students and their life circumstances) and space (anywhere, dependent upon equipment requirements)" (Garrison, Cleveland-Innes, & Fung, 2004).

When online learning communities participate in established and sustained online learning experiences, they create educational opportunities for the communities. Such online learning communities represent a new *learning ecology* that enables students to interact with one another and their facilitators. Students should make adjustments from spontaneous, verbal face-to-face conversations to the intri-

cacies of participating in meaningful on-line learning experiences. These interactions take place through written words on communication networks. To personalize interactions, a social presence must be formed where "participants…coalesce for a common purpose" (Garrison *et al.*, 2004). Social presence can be described as "the ability of participants to identify with the community (for instance, the students enrolled in a course of study), communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities" (Arbaugh *et al.*, 2008). Socialization is fostered within the community of students when they feel that they belong, respond to comments of others, feel comfortable in engaging with others, exchange ideas, express emotions, are open to others, and refer to others by name (Garrison *et al.*, 2004). Furthermore, such a learning community becomes a risk-free personalised space were students express their feelings, communicate openly (cohesiveness) and collaborate with one another (group cohesion). They see themselves as real people and feel socially and emotionally connected (Arbaugh *et al.*, 2008).

It is, however, important to move beyond simply establishing socio-emotional presence and personal relationships, and reach intellectual interaction through participation (Garrison, 2007). A shift takes place over time: "The purpose of social presence in an educational context is to create the conditions for inquiry and quality interaction (reflective and threaded discussions) in order to collaboratively achieve worthwhile educational goals" (Garrison, 2007).

There are four types of participation: (i) passive participation, (ii) participation by consultation, (iii) participation by collaboration, and (iv) empowerment participation. Passive participation is when participants' participate minimally and give minimal or no feedback. Participation by consultation involves the answering of questions only, without giving experiential voluntary input. Participation by collaboration takes place when groups are formed and participants participate through discussion and analysing, thereby establishing "horizontal communication and capacity building" (Tufte & Thomas, 2009) through collaborative effort between participants. The participants are initially dependent on the facilitator and other experts, but over time participation becomes independent from supervision. Empowerment participation becomes eminent when participants are skilled and willing to initiate learning. Participants and facilitators are equal partners and knowledge and experiences are shared in empowered communities (Tufte & Thomas, 2009).

Through participation, the goals of mutual learning can be achieved. These goals are to enhance communication, foster respect, listen, and learn in order to achieve outcomes (Mohan, 2001). The ultimate outcomes would be to enable the "illiterate, poor, marginalized people [to] represent their own lives and livelihoods…do their own analysis and come up with their own solutions" (Chambers, 1997). This has "the potential to increase a population's ability to be self-determining" (Cornwall, 2002), and it leads communities to make their own important decisions, instead of just contributing information to enable others to make important decisions on their behalf (Cornwall, 2002).

De Villiers (2010) found that when her participants made postings and there was no response from other participants, they felt disappointed and demoralized. However, when others commented positively, participants were encouraged and it boosted their self-esteem. Sometimes participants felt disappointed when there were no new comments or information posted when they visited the SNS. Some participants felt daunted by the apparent expertise and confidence with which other members participate on the website. When posting comments, some experienced stress pertaining to how other participants would react to the post. The facilitator should accommodate all students in order to prevent them from feeling inferior, and develop a sense of confidence in all participants (De Villiers, 2010). Students who feel confident will extend their learning and participate.

Through participation in online discussion forums, participants engage in new and different ways of learning. They can explore beyond the boundaries of the formal learning material and by contributing, they internalise and contextualise their learning (De Villiers, 2010).

3.2.4.2 Other aspects relating to the conceptual framework

Mobility refers to "the ability to move easily from one place to another" (Hornby, 2004, p. 754). When this is applied to mobile learning, it includes devices like cellular phones, i-Pads, laptops and tablets that could be used anywhere to establish communication between facilitators and students to optimize learning. Such devices overcome barriers like the remoteness of the student, or the insufficiency of Internet access. Mobile learning allows students, and facilitators to freely communicate with one another and learning opportunities become available to rural and remote students where infrastructure is inadequate (Evans, 2005).

Using mobile technologies in education provides students with opportunities for *user-led education*, whereby they construct knowledge, collaborate with peers and form learning communities. They interact with one another in classroom setups, as well as beyond. e-Learning technology infrastructures infiltrate the education landscape because, with mobile devices, the Internet can be accessed *wherever* and *whenever* (Mayisela, 2013).

Networking involves the interaction of people, activities and events to enable students to be informed at any point in time (Kruger, 2012). Students and facilitators exchange ideas, collaborate, support and mentor one another at any given time and place as needed. Networking incorporates the essence of blended learning as it enhances the connectedness of students with others, as well as with their learning. Networking allows students to share information and solve problems among themselves. Technology has become a tool for learning because it serves as an information processor whereby knowledge is linked to navigation through information. People become connected and learning interactions flow and develop to enrich the learning experience (Cronje & Clarke, 1999).

Interactivity refers to the interaction between humans and technology in dialogue form. Interactivity involves sharing of aspects within a communicative environment. This could be face-to-face, or humans-to-computers (Rouse, 2013).

"Learning-by-doing is generally considered the most effective way to learn*"* (Lombardi, 2007). Learner-centred classrooms invite students to learn through doing and they become actively engaged in their own learning, and with one another, and with resources. This empowers students (Grabe & Stoller, 1997). The facilitator's task is to guide students during learning until they take control of their learning and become responsible for achieving the learning outcomes (Cronje & Clarke, 1999). e-Learning increases the quality of education because there are direct connections between interaction and learning effectiveness. Technology can enhance interaction in traditional lecture classes and allow students to conduct research at more advanced levels (Oblinger & Hawkins, 2005).

Personalization entails the possibility of a technological device to become a personal tool for individuals. Students can choose from the various devices and modes to interact with their learning. The benefits of academic Facebook provides easy communication and collaboration; sharing of ideas; solving of problems; explaining of concepts; correcting of misconceptions; as well as the ability to read critically and challenge one another in order to reach higher levels of excellence (Mayisela, 2013). Learning is an individual and a personal experience and each person internalises learning differently. Learning devices should be context specific, as well as person specific, and suit an individual's personal needs (Kruger, 2012). If a device passes the *test* of meeting the learning needs of an individual student, it will enhance the learning experience in order to empower students to make informed decisions about their learning (Keppel *et al.*, 2006).

Flexibility relates to different technologies used to create flexible learning experiences. Students should engage with the learning content when, where and how at any given time (Evans, 2005; Oblinger & Hawkins, 2005). Students could use various devices for their own purposes, while applying these for academic purposes in order to sustain communication in different learning environments (Oblinger & Hawkins, 2005). Mobile technologies allow students "flexible (irrespective of time and location) access to social networks such as Facebook" (Mayisela, 2013, p. 2). ODL allows more student flexibility to adults who have to balance study, family life and work in order to cope with all the demands of life. These off-campus students rely heavily on ICTs to connect with their facilitators and peers. e-Learning provides the flexibility to fit coursework into students' duties and responsibilities (Oblinger & Hawkins, 2005).

Accessibility is the ability to directly access and benefit from shared knowledge. Accessibility is "the degree to which a product, device, service, or environment is available to as many people as possible" (Keith, Whitney, & Wilson, 2009). The 21st centuries' technological revolution and Internet-enhanced contexts enable rich learning experiences for students. The most visible and positive impact of the Internet on education is the free access to extensive learning content. SNSs are part of the open-

source movement which postulates that "all of us are more intelligent than one of us, so let's share the keys to that collective intelligence" (Dryden & Vos, 2011, p. 55). The web provides timely, authentic information whenever it is required. This information is available to many people at the same time or at different times—depending on their needs. Information is freely available to anyone who taps into the given source. Disadvantaged students can access content through the Internet as it is available to anyone who wants to make use of it. However, an inhibiting factor to poor students is the cost of Internet access (Dryden & Vos, 2011).

3.2.5 Critical outcomes

Higher order thinking skills are called *critical outcomes* in the conceptual framework (Figure3.1). They are classified as *critical thinking skills, information and communication literacy (ICT) skills, self-regulated learning skills* and lastly, *life-long learning skills*.

Loyens *et al.* (2008) claim that goal-setting, metacognition and self-assessment influence learning processes when students apply self-regulated learning principles in order to increase academic performance. Critical thinking involves the skills of analysing, synthesising and evaluating. To keep up, people should become life-long learners, and the use of information literacy has become an essential skill for the 21st century.

3.2.5.1 Critical thinking skills

Critical thinking is not an isolated goal—it is interrelated with other education objectives (Scriven & Paul, 1987). Critical thinking is "self-guided self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way" (Elder, 2007). Individuals who develop this skill live rationally, reasonably and empathically within their communities. They strive to improve the world around them in order to contribute to a balanced society. Motivation plays a cardinal role in developing critical thinking skills. Elder (2007) also maintains that when students employ critical thinking skills, they analyse, assess, and improve thinking, and they are able to: (i) ask important questions, (ii) gather and assess relevant information, (iii) think flexibly and see alternatives, (iv) consider solutions to problems, and (v) communicate solutions clearly. All people could become critical thinkers: "Critical education can increase freedom and enlarge the scope of human possibilities" (Burbules & Berk, 1999), therefore it is vital that people become more critical in thought and action.

3.2.5.2 ICT literacy

ICT literacy is essential for people to be successful in the 21st century. To be literate encompasses the ability to read, write, do arithmetic, as well as be technologically competent (Mayisela, 2013). Students should be able to communicate in any mode of communication: "ICT can be viewed as a set of skills or competencies, a vehicle for teaching and learning, or as an agent of change" (McFarlane,

2001). There are three inter-connected views of the role of ICTs in the learning environment as (i) a tool, (ii) support to learning, and (iii) a revolutionary agent (McFarlane, 2001). Students should actively engage with their course-work through the use of ICTs to become empowered and equipped with the "necessary skills needed for the future" (Keppel *et al.*, 2006).

3.2.5.3 Self-regulated learner

The use of Facebook for academic purposes opens up possibilities for students to become self-regulated learners. To become self-regulated, students have to adjust themselves to gain knowledge themselves. Students can choose whether they want to become skilled scholars who have the personal work ethics of being a self-regulated learner—a critical thinker and a life-long learner. Throughout the ages, the concept of work ethics has evolved and today it relates to the concept of "self-development" (Grieve, Van Deventer, & Mojapelo-batka, 2006, p. 346). Students should evolve from dependency to autonomy (through coaching and scaffolding), self-agency (self-regulation), and move towards self-reliance (critical thinkers) (Grieve *et al.*, 2006). A critical evaluation of the features of Facebook indicates that it assists in developing self-regulation because it provides the tools needed for discourse, discussions, collaborative writing, and problem-solving. It provides online support to scaffold students' "evolving understanding and cognitive growth" (Unesco., 2013). It is not bound to classrooms or distances as it allows access to different resources and enriches the learning experience of individuals. Self-regulated learners understand that information evolves continuously, and therefore they can never stop learning. This leads to the realization that to be a life-long learner is no longer an option, but a necessity (Johnson *et al.*, 2013).

3.2.5.4 Lifelong learner

Life-long learning is important in order to enable students to keep up with rapid development: "Life-long learning is everyone's individual responsibility" (Dryden & Vos, 2011, p. 487). When peers and tutors teach one another, it becomes a "two-way reciprocal learning activity" (Boud *et al.*, 1999) which promotes lifelong learning skills.

"We are now standing on the threshold of a new age—an age of revolution…true education…enables you: to identify and develop your own unique talents; to create your own future, in any field you choose; co-create a new global web of shared relationships and create an entirely new approach to lifelong learning, schooling and education—in a new world of creative, networked intelligence, abilities and skills" (Dryden & Vos, 2011, p. 37). Facilitators should put measures in place to adopt new teaching and learning strategies to enable rural students to benefit from technological support in order to enhance their learning. Researchers and policy makers should be "open-minded to the full range of ways that education—and the evolving power and capability of ICT—can contribute to the betterment of humankind" (Kozma, 2003, p. 239).

3.3　Summary

This chapter related to literature implied in the conceptual framework (Figure 3.1) for the use of ICTs for ODL. The framework comprised five concentric layers (from the centre, outwards). They were (i) the student; (ii) curriculum aspects; (iii) strategic principles; (iv) criteria for excellence; and (v) outcomes to be reached. I also examined the influence of the affective domain of Bloom's Taxonomy (Bloom *et al.*, 1956) while learning with technology in order to improve students' learning experience. Social constructivism, as the related field of pedagogy provided the background for the use of Facebook as academic tool. I explained the role of coaching and scaffolding in order to fast-forward students to technology acceptance.

Table 3.4 provides a summary of research relating to the use of academic Facebook.

Chapter 4 relates to the design and methodology followed during this research.

Table 3.4   Summary of previous research on academic Facebook

	De Villiers	Mayisela	Nagel	Bester
Institution	UNISA, Pretoria	Walter Sisulu University, Mtata	University of Pretoria	North West University—Potchefstroom campus
Year	2010	2012	2011-2012	2013
Name of study	Academic use of a group on Facebook: initial findings and perceptions	The potential use of mobile technology: enhancing accessibility and communication in a blended learning course	A student-grown Facebook group in an architecture class: seed or weed?	*The academic use of Facebook™ to enhance affective learning of open distance learning teacher-students in the Eastern Cape*
Course	Post-graduate course in e-Learning. BSc Honours: Concepts and principles of e-Learning	Java Programming course: A computer science course	2nd and 3rd year Agriculture class. Theory was class-room based and practical studio-based. Facebook just to interact and communicate between students	Post-graduate: BEd Hons Research Project—Writing the Proposal
Mode of delivery	Distance education—ODL	On-campus	On-campus	Distance education—ODL
Purpose of study	To see if Facebook can support true learning	To establish how the use of m-tech can enhance accessibility and communication in blended learning and Facebook	Research was student-lead. Because of lack of communication between students in course, to support their learning environment	Establishing support group on Facebook to enhance learning. To discover which affective emotions are experienced during learning with technology, what support is needed in ODL
Facebook	Created FB group page	Created a Facebook group page as communicator	2nd year students formed a group on FB because they wanted a institutionally-based electronic forum to communicate. Used it for more than 1 year	Created a Facebook group page as communicator
Active on FB before?	+- 26 in mid-twenties, keen Facebook already. 4 joined FB 1st time for this study purpose	6—All young people	All young people	Only 1 active on Facebook previously. All older people between 32-55 years 21 participants had to be joined to Facebook before they could join the FaceFunda group page
Participation	Optional on Facebook	Optional on Facebook	Optional on Facebook	Optional on Facebook
Site selection	Participants from across SA and globally	Eastern Cape rural students attending Walter Sisulu University in Mtata	Urban students from Gauteng attending University of Pretoria	Eastern Cape rural students enrolled in an ODL course through OLG, managed by NWU
Participants:	40 students registered on course. 35 joined group (including 5 academic-staff)—24 students active on group	36 students registered on the course. 28 participated on Facebook group	123 students had access to the group. 85 participated on Facebook	74 registered for course in EC, invited to participate. 34 came to various coaching and scaffolding meetings. 22 on FaceFunda

	De Villiers	Mayisela	Nagel	Bester
FB group name	ELRN400	CSI2101	Not mentioned	FaceFunda
Facilitator actions	Did not initiate any topics or took part in conversations. Only prompting questions and guidance to useful sources		No interaction. Totally student-lead	Had to create all leads, post all photos, ask all questions, place notices and invitations, create theory-video and other information
Sampling		Purposive convenience sampling. Used target population		Purposive sampling
Data collection strategies		Unstructured interview with lecturer. Semi-structured questionnaire to students. +closed ended questionnaire (multiple choices and yes/no) + Likert-scale questions and open-ended questions	Col survey with Lickert scale + 29 questionnaires in hard copy. Facebook posts of 85 students that joined	Individual interviews, Focus group interview, Facebook text, research diary. Used Atlas ti
Method of course-delivery	Theory delivered paper-based	Blended learning	Blended Learning	Theory of the course is delivered through paper-based tutorials. My research organised face-to-face sessions for theory-delivery and further interaction on Facebook
Pedagogy	Social constructivism	Not mentioned	Social constructivism	Social constructivism
Analysis				Content analysis
Method	Simplified grounded theory approach. Qualitative evaluation research	Case study—Mixed method	Quantitative and qualitative	Qualitative case study
Problems experienced	Confusion with joining members	Students without mobile devices felt they were being disadvantaged but they could use on-campus computers	None mentioned	Connectivity problems with joining members on Facebook group. Very unskilled on Facebook and Internet. They did not comment on their own
Conclusion	Participants did learn more from their involvement with FB. Especially researching beyond study material and by making personal contributions. Exposed to e-learning—positive	M-tech has potential to support blended learning beyond classroom and computer rooms. Improved online communication, increased participation and collaboration	Cognitive presence: high in class contact. Social and teaching presence: high on Facebook. Blended learning experience successful. Facebook did not detract attention from course-work, but stimulated increased social and teaching presence. Greater social cohesion and identity	Support group very positively experienced by participants—both at coaching and scaffolding sessions and on FaceFunda. Rural teachers' ODL affective experience can be enhanced with the academic use of Facebook