

PROJECT-BASED LEARNING IN HIGHER EDUCATION: NEW SKILLS SET FOR CONSUMER STUDIES TEACHER EDUCATION

A. DU TOIT, M. HAVENGA & M. VAN DER WALT
NORTH-WEST UNIVERSITY

Abstract

The changing expectations demanded of life and work in the 21st century require that employees, including teachers, be properly prepared for situations that may arise in this day and age. This is especially true for teachers of Consumer Studies, who have to develop an expanding range of knowledge and skills in order to facilitate teaching-learning effectively in their subject. Project-based learning has been implemented in Consumer Studies and other disciplines as a teaching-learning strategy to develop 21st century career skills in students, but has not yet been reported on in relation to the preparation of pre-service Consumer Studies teachers. A qualitative case study was undertaken to determine how the implementation of project-based learning as a teaching-learning strategy would affect and contribute to the development of preferred skills in pre-service Consumer Studies teachers. The findings show that project-based learning could make various positive and constructive contributions to the preparation of pre-service teachers for their careers, and could include the development of a number of preferred skills. Further research could be conducted regarding the implementation of project-based learning to develop specific skills or attributes (other than those mentioned in this study) in teachers.

Keywords: 21st century skills, Consumer Studies, higher education, project-based learning, teacher preparation

Note: This article reports on a part of a more extensive study that was conducted regarding the implementation of project-based learning in Consumer Studies teacher education

1. INTRODUCTION

In recent years, several research studies have indicated a disconnect between graduates' professional attributes and the expectations of their employers, specifically regarding skills necessary to function optimally in this century (Bagheri, Ali, Abdullah & Daud, 2013:17; Bell, 2010:41; Jollands, Jolly & Molyneaux, 2012:143; Starobin, Chen, Kollash, Baul & Laanan, 2014:133).

This disconnect underscores the importance of preparing students¹, as part of their higher education, for the roles expected of them, not only in their future places of employment, but also in the changing context of the 21st century (Wolff, 2003:3). Globalisation is one of the most significant context changes of the 21st century, impacting on the economy, politics, ecosystems, technology and communication, to name but a few. The 'interconnectedness' brought about by globalisation impacts on education, making it a necessity for lecturers to help prepare their students in a way that will facilitate communication, collaboration, technology use and problem-solving between people across the world (Saavedra & Opfer, 2012:8). To function optimally in contemporary times, students are required to have a different set of knowledge, skills and perspectives than that of previous generations (Spires, Wiebe, Young, Hollebrands & Lee, 2012:13). Education needs to adapt and be tailored to address these challenges (Zhou & Lee, 2009:2), which implies that the preparation of teachers needs to be revised accordingly.

Consumer Studies is a school subject that requires that its teachers be prepared with a specific set of skills and attributes to support effective facilitation of the subject. The development of such skills was the focus of the 2016 World Home Economics Day celebrations (International Federation for Home Economics, 2016:2) and was listed as an urgent need in the key area of “Teacher demand, supply, utilisation and development and support” at a national meeting called by the Director of the Services Subjects² (Department of Basic Education (DBE), 2015:51). The need was expressed for skills development in teachers that could potentially be addressed in higher education as part of teacher preparation.

Internationally, a shift has taken place in higher education in the preparation of pre-service teachers, aimed at equipping them with skills and attributes to make them more proficient in and for the 21st century (Spires *et al.*, 2012:4, 13). In an endeavour to delineate educational excellence, Wagner (2012b:14) recommends that academics develop and employ strategies through which critical and creative thinking, communication and collaboration (amongst other skills) can be taught and assessed, as it is felt that traditional teacher preparation through lecture-type instruction does little to foster essential skill development (Bagheri *et al.*, 2013:17). Project-based learning is a teaching-learning strategy that motivates and inspires students to learn (Wurdinger & Qureshi, 2015:286) and that can have a profound effect on the development of a young person (Wagner, 2012a:79). This “profound effect” includes the development of several sought-after skills, which will be expanded upon in the literature review.

¹This article is about students in higher education studying to become teachers. In a few instances the article refers to learners – that is the high school learners who are or will be in the classes of Consumer Studies teachers.

²The Services Subjects in South Africa consist of Consumer Studies, Hospitality Studies and Tourism. These three subjects all deal with providing various services and products to customers.

The purpose of this study was therefore to investigate how the use of project-based learning could foster the development of 21st century skills as part of the skills and attributes required of Consumer Studies teachers. This was attempted by implementing project-based learning as a primary teaching-learning strategy in a pre-service Consumer Studies teacher preparation module to develop a preferred set of skills as part of their higher education qualification.

2. LITERATURE REVIEW

A 'skill' may be defined simply as the “ability to do an activity or job well” (Cambridge Dictionaries Online, 2016). Expanding on this definition, Kutshanova, Lyons and Lichtenstein (2009:194) describe skills as the integration of knowledge with aptitude within a particular specialisation field, or the transference of expertise into certain behaviour. From this explanation it becomes clear that particular skills need to be developed for specialisation fields, through the incorporation of knowledge with the ability to execute particular competencies. Skills development for teachers, and for particular subject fields, should thus be precise to support those teachers in their profession.

According to a report compiled by the Departments of Basic Education and Higher Education and Training (DBE & DHET, 2011:99), initial teacher education programmes delivered by some universities in South Africa are excessively focused on theory content and few have been designed to go beyond skills training to developing competences and reflective practice. This indicates a discrepancy between what pre-service teachers are being taught in their preparation programmes and what is expected of them in the teaching profession. The report emphasises that teacher preparation should not only include knowledge of curriculum content, but also skills appropriate for teaching (DBE & DHET, 2011:76). To support this aim, higher education institutions should design and develop programmes “... focusing particularly on the skills ... required to improve the quality of learning and teaching ...” of students (DBE & DHET, 2011:7).

As part of the National Qualifications Framework (NQF, 2015:62), the South African Department of Higher Education and Training specifies competencies and skills required for beginner teachers. These competencies and skills include (but are not limited to) the following: knowledge development; an understanding of how learning takes place; effective communication skills; planning skills to support teaching and learning; management skills – especially classroom management; assessment skills; a positive work ethic; and critical reflection skills. Additional desirable skills in the teaching profession, that are also sought-after qualities in employees in the 21st century, include the following: problem-solving; controlling own learning; being creative; implementing collaborative teamwork; effective time management; metacognition; reflective practice; enthusiasm; motivation;

teacher mediation; instructional skills; and immersion in authentic experiences (or the practical application of information to issues in daily life) (Bell, 2010:39; Borich, 2011:330-361; Dalgarno, Kennedy & Merritt, 2014:214-218; Dixit, 2014:251-252; Freiberg, 2002:57; Hart, 2015:1; Smith & De Zwart, 2011:24; Spires *et al.*, 2012:6, 13, 14; Stronge, 2007; Wagner, 2012b:5).

Within these general “teacher skills”, certain skills are more sought after in specific subjects due to subject requirements and specialisation (DBE & DHET, 2011:11; Freiberg, 2002:57). This is also true for the set of skills required of Consumer Studies teachers (Du Toit, 2014:52).

Consumer Studies teacher preparation

Consumer Studies is considered a valuable high school subject that can make a vital contribution to the development of school learners' life skills (Du Toit, 2014:48; Koekemoer & Booyse, 2013:543; Umalusi, 2014:14) if teachers are appropriately prepared in facilitating such skills. Regrettably the same deficiencies mentioned in the report by the Departments of Basic Education and Higher Education and Training (2011:99), regarding teacher preparation not including enough skills development, have been found in Consumer Studies (Umalusi, 2014:i, 16). This indicates that Consumer Studies teacher training should be amended and improved.

Teaching Consumer Studies in high schools can be challenging due to the requirement that broad knowledge content be taught concurrently with multifaceted practical skills, with an overarching aim to support small-scale production and entrepreneurship (Du Toit, 2014:50; Umalusi, 2014:8). To support the facilitation of Consumer Studies, the three principles of (1) life-relevant learning, (2) transferability of learning to new contexts, and (3) the intentional development of 21st century skills are recognised as fundamental for the preparation of Consumer Studies teachers (Du Toit, 2014:54). These principles, together with the challenges that are presented by teaching the subject as well as the specifications for newly qualified South African teachers (NQF, 2015:62) require that Consumer Studies teachers be prepared with a particular set of skills to empower them to facilitate the subject effectively in practice. These particular skills are also needed to support the development and learning of subject knowledge, which will contribute to the preparation of pre-service teachers for their profession.

Notwithstanding the scarcity of documented guidance for the preparation of Consumer Studies teachers (Du Toit, 2015:22, 24), a list of some of the skills that are particularly important for Consumer Studies teachers, together with motivations for their selection in this study, is provided in Table 1. The skills in Table 1 are organised to follow the general order of lesson preparation, presentation and evaluation.

Different scholars assign varying levels of significance to these skills as part of Consumer Studies teacher preparation. The scope of this article also does not allow for in-depth reporting on all of these skills; however, it is important to note which skills are deemed essential to the subject.

Developing and promoting the skills mentioned for pre-service Consumer Studies teachers in Table 1, require that a suitable teaching-learning strategy be employed in their preparation courses. An appropriate teaching-learning strategy would be one that is rooted in active, critical and self-directed learning, and that supports the development of this set of skills.

Table 1: A particular set of skills required of Consumer Studies (CS) teachers

Skill	Motivation
Metacognition	Metacognition (understanding how learning takes place) is necessary in active construction of knowledge (Mok & Lung, 2005:19). Metacognition is the foundation of all thinking and is crucial in problem-solving, planning and reflection (Van der Walt, Maree & Ellis, 2006:179).
Planning skills to support teaching and learning	CS teachers are required to have efficient planning skills to be able to organise and manage all aspects surrounding the subject, such as teaching plans, as well as time, infrastructure, equipment and finances in the subject (DBE, 2011:9, 17).
Management skills	Time management is of particular importance in CS, as teachers are required to cover a broad number of topics in the curriculum concurrently with multifaceted practical skills (DBE, 2011:9). Practical tasks, especially, require careful classroom management to ensure that the required skills are optimally developed and that contact time is utilised fully.
Active and critical learning skills	Implementing appropriate active and critical teaching-learning strategies is encouraged in the CS curriculum (DBE, 2011:4; Umalusi, 2014:88) and CS teachers have to be skilled in implementing such active learning strategies. The same teaching-learning strategies suggested for use in CS education, should be employed in the preparation of teachers who will be teaching the subject (Du Toit, 2015:24).
Linking learning to real-life situations	This is a core aim of the national curriculum and promotes learning in the local context (DBE, 2011:4). Many topics and sub-topics in CS link directly to real-life situations, making learning life-relevant for school learners and preparing them for the real world (Umalusi, 2014:74). Teachers should develop skills to facilitate these links effectively as part of CS teaching and learning.
Critical and creative thinking skills to facilitate problem-solving and entrepreneurship	CS teachers should prepare learners who are able to identify and solve problems and make decisions using critical and creative thinking (DBE, 2011:5). The critical and creative thinking skills of pre-service CS teachers should therefore be developed to enable them to facilitate such skills in their learners. Critical thinking is essential for CS professionals (McGregor, 2009) and is a key skill in entrepreneurial learning (Carwile, 2009:211) and problem-solving (Ten Dam & Volman, 2004:362).
Collaboration and communication skills	Collaboration skills are indispensable in the 21st century (Bell, 2010:39; Larmer & Mergendoller, 2012:3). Collaboration in the form of partnerships with industry, communities, policy makers and other professionals in the field of CS can enhance life-relevant learning in the subject (Swafford & Dainty, 2010:209). Communication supports effective collaboration and learning.
Critical reflection skills	To address the specified need of the DBE and DHET (2011:99), as well as the NQF (2015:62) for including reflective practice in the preparation of teachers, this skill needs to be developed. It is also a sought-after quality in employees in the 21st century (Wurdinger, Haar, Hugg & Bezon, 2007:151).

Project-based learning

Project-based learning is closely related to problem-based learning (Hmelo-Silver, 2004:236; Speckels, 2011:39) and the terms are sometimes used interchangeably (Bradley-Levine, Berghoff, Seybold, Sever, Blackwell & Smiley, 2010:3). Problem-based learning is defined as the solving of ill-structured problems to provide a context for learning, whereas project-based learning refers to a full-scale project, planned and developed by students over time and requiring a high degree of self-direction (Kolmos & De Graaff, 2007). Though different authors have different opinions about which strategy originated first, the Buck Institute for Education (BIE) (2012:3) refers to problem-based learning as “a forerunner of project-based learning”.

Project-based learning may be defined as “a teaching method where teachers guide students through a problem-solving process which includes identifying a problem, developing a plan, testing the plan against reality, and reflecting on the plan while in the process of designing and completing a project” (Wurdinger *et al.*, 2007:151). This innovative teaching-learning strategy actively involves students in their learning through a structured process aimed at developing a solution for a problem (Havenga, 2015:78). Such projects as part of project-based learning result in meaningful learning experiences and stimulate students' interest in learning (Wurdinger *et al.*, 2007:151). Project-based learning offers students opportunities to apply learned content and skills to real-life situations and their careers (Bagheri *et al.*, 2013:18; Hixson, Ravitz & Whisman, 2012:2).

The implementation of project-based learning provides opportunities to develop and promote several skills that are useful in real life (BIE, 2012:8; Larmer & Mergendoller, 2012:3). Skills reported to be developed and promoted in students as part of project-based learning include problem-solving, time management, collaboration, team-work and communication (BIE, 2012:6-8; Hixson *et al.*, 2012:2; Wolff, 2003:3; Wurdinger & Qureshi, 2015:280). More skills associated with project-based learning include critical thinking, negotiation skills and taking responsibility for one's own learning (Wolff, 2003:3), self-directed learning (Yasin, Mustapha & Zaharim, 2009:253), as well as managing incomplete or ill-structured problems (Palmer & Hall, 2011:358). The skills associated with project-based learning align well with the skills suggested earlier for pre-service Consumer Studies teachers' professional attributes (Table 1), and will support their optimal functioning in the 21st century in their everyday lives and their careers.

The exposure to authentic situations that project-based learning affords students, contributes to the preparation of students for meaningful work (Larmer & Mergendoller, 2012:3). Additionally, it has been found that teachers who were involved in project-based learning as part of their training, used 21st century skills more often and more extensively in their careers than those who were not exposed to project-based learning (Hixson *et al.*, 2012:iii).



The potential for skills development, combined with the prospective implementation of those attained skills in their professional careers, implied project-based learning as an appropriate teaching-learning strategy to employ in preparing pre-service teachers in higher education.

The problem which needed to be addressed, was finding a suitable strategy to employ in higher education as part of the preparation of Consumer Studies teachers to develop the particular set of skills required of them. The potential of project-based learning to develop this set of skills for future careers implied that it could be useful in the preparation of pre-service Consumer Studies teachers. In addition, a project-based teaching-learning strategy aligns well with the requirement stated in the Curriculum and Assessment Policy Statement (CAPS) (DBE, 2011:4) that Consumer Studies teachers should facilitate active and critical learning. In line with this problem, the research question that guided this study was: How can the implementation of project-based learning in higher education contribute to developing the particular skills required of pre-service Consumer Studies teachers?

Subsequently, a study was conducted to investigate the contribution of project-based learning to the preparation of pre-service Consumer Studies teachers in higher education, with a specific focus on the development of particular skills and the preparation of students as Consumer Studies teachers. It was anticipated that the implementation of project-based learning as a teaching-learning strategy might help close the divergence between the professional attributes of these pre-service teachers and the expectations of their future employers.

3. EMPIRICAL INVESTIGATION

A qualitative research design, based on a social constructivist worldview, was employed to execute this study. The research was conducted at a South African university that prepares pre-service Consumer Studies teachers through a Postgraduate Certificate in Education (PGCE). As part of the PGCE, these students complete a module (subject) that specifically focuses on the preparation of students to become effective Consumer Studies teachers.

Participants

All the students enrolled for that particular module in 2013, comprised the participants for the study. Only five students were enrolled in that year and subsequently a case study was selected as research design. The participants had all completed a prior degree related to Consumer Studies curriculum content, thereby fulfilling the main prerequisite to enrol in the PGCE as a pre-service Consumer Studies teacher. These prior degrees were obtained at four different universities and included one Bachelor's degree in Consumer Sciences (Graphic Design), three B.Sc. degrees in Consumer Sciences (with different specialisations, e.g. Economic Management) and one B.A. degree in Fashion Design.

All the participants were Afrikaans-speaking Caucasian females, between the ages of 23 and 26 years.

Ethics

Participants completed a written consent form (detailing the intent of the research, contact particulars of the researcher and explicitly stating that their participation in the study was voluntary) prior to the onset of the study. The university's Ethics Committee also granted permission to conduct this research under the umbrella of ethical approval granted for the project "Teaching and learning strategies to promote self-directed learning".

Data collection

Data was collected over a period of four months using qualitative methods. Each participant took part in six focus group sessions and two individual interviews, conducted by the module lecturer. Each participant had to submit a personal reflective journal entry, as well as a project sheet (Havenga & De Beer, 2013) once a week for the duration of the study. At the conclusion of the module, each participant compiled and submitted a comprehensive reflection about her experiences during the study. The module content was reorganised and scaffolded to conform to the requirements of project-based learning, and included a range of planned activities to develop knowledge and skills pertaining to Consumer Studies education. These activities were formatively assessed and discussed to provide feedback that could be utilised in subsequent activities. At the conclusion of the module a product focused on Consumer Studies content and a related presentation was formally assessed. This product was part of the project-based learning strategy, in the form of a themed portfolio. Some of the project activities were structured as group work and others as individual work. In addition, the researcher kept detailed research notes of her observations of participants, their comments and interactions during the study. The interviews, documents, research notes and participants' completed project work were used to gain insight into their skills development within project-based learning during the case study.

Data analysis

Data analyses commenced with verbatim transcribing of digital recordings, followed by an iterative process of memo-ing and coding. Some codes, related to particular skills required of Consumer Studies teachers, were derived (a priori) from the literature (such as time management, planning and critical thinking). Additional codes emerged from the data itself (a posteriori) relating to participants' experiences of project-based learning (such as their functioning as a team and their reflection on the learning process), as well as principles relating to Consumer Studies education (such as life-relevant learning). ATLAS.ti™ software was used to support the analysis of data and the development of themes.

Validity and generalisability

To support methodological rigour, member-checking by participants was utilised to validate the researcher's interpretation of concepts found in the data. Various data collection methods were employed to ensure rich, deep data and co-analysts were employed to analyse the data. In addition, two research experts as well as members of the Ethics Committee appraised the open-ended questions that were used in questionnaires and focus group sessions to support validity and to limit subjectivity in the research. Generalisability of the results was not considered to be an issue, as the intent of qualitative studies is particular to a specific context or site, and therefore it was understood that such studies are not meant to be generalised.

Limitations

It is difficult to assess the development of skills, since various factors outside of the learning context could also influence their development or waning. In this study, a qualitative approach was used, which was largely informed by the opinions and experiences of participants. Adding a quantitative analysis, such as using an instrument specifically designed to measure the development of such skills, might add to the accuracy of the data. A small group of participants was used in this study. Using a larger population would increase the generalisability of such a study. The small number of participants could also have caused a lack of anonymity, which might have predisposed participants to give more socially desirable responses.

4. FINDINGS AND DISCUSSION

The problem that this study aimed to address was finding a suitable strategy to employ in the preparation of Consumer Studies teachers to develop the particular skills required of them (Table 1). The research question aiming to address this problem was "How can the implementation of project-based learning in higher education contribute to developing the particular skills required of pre-service Consumer Studies teachers?" Project-based learning was implemented as a strategy to address these difficulties. It was ascertained that the participants had not had previous exposure to project-based learning in their undergraduate degrees. All participants were therefore inexperienced with project-based learning as primary teaching-learning strategy.

A number of quotes from participants have been included to add depth to the descriptions of the findings. Participants were given random pseudonyms to protect their anonymity and are referred to as Angela, Susan, Bernadette, Jessica and Tiffany.

Participants attributed the development of several of their skills to project-based learning. In particular, evidence emerged regarding the development of participants' ability to apply knowledge in practice, planning skills, collaboration skills and critical thinking skills and to a lesser extent also time management skills.

Two participants mentioned planning as the particular skill that they alleged they had developed the most during the Consumer Studies teacher preparation module. Jessica, for example, explicitly stated this when she said, "My planning abilities have improved a lot as a result of the project ..." Angela mentioned organisational skills (closely linked to planning skills) in this regard. Bernadette and Tiffany also reported that their planning skills improved because of following a project-based approach. Planning is a life skill that forms an essential part of the project-based learning process (Wurdinger & Qureshi, 2015:285), and would therefore have been required of participants as part of their learning process. Planning is also essential in Consumer Studies education, where teachers are expected to plan and organise a whole range of aspects surrounding the teaching and learning of the subject, including (but not limited to) planning lessons, planning practical sessions and planning a budget (DBE, 2011:9, 17).

It is possible that the participants already had some time management skills when they started their PGCE; however, it was expected that the challenges that participants were confronted with in the project-based learning module, would provide opportunities for further development of such skills. Bernadette and Jessica developed meticulous time management skills that manifested in their project plans, learning goals and schedules, which they drew up for completing their projects, as noted by Jessica: "My time management improved greatly." In contrast, Angela and Tiffany mentioned that they would have liked to manage their time better, implying an acknowledgement of their need to further develop their time management skills, as shown in this quote by Tiffany: "I wish I had managed my time better ... I really did not do what I wanted to." Susan exhibited exceedingly poor time management skills from the start of the module, resulting in several admonishments to curb her procrastination, which had little improving effect. This finding might be related to statements made by Hall, Palmer and Bennett (2012:161), as well as Wurdinger and Qureshi (2015:280) that project work takes more time than other more passive methods of learning, which might make the task seem more daunting to students. Effectively managing time is, however, an important life skill (Wurdinger, 2015:280) and the development thereof is often associated with project-based learning (Jollands *et al.*, 2012:147). Consumer Studies teachers are expected to be proficient at managing time (DBE, 2011:9) and it was therefore disappointing that this skill did not develop extensively because of implementing project-based learning.



The implementation of a suggestion by Wolff (2003:20) that project-based learning should be structured with larger blocks of time than for non-project-based learning, might allow better addressing of the development of time management skills in such courses.

It emerged that the implementation of project-based learning contributed positively to linking learning to real-life situations for the participants. Angela, Susan, Bernadette and Tiffany mentioned that new learning and the application thereof to real-life situations were clearly linked in the module. Angela stated that "... it [the project] helped me to think like a teacher ..." – indicating that the implementation of project-based learning contributed to her professional development for real-life teaching. The projects in the teacher preparation module were purposely constructed to address Consumer Studies curriculum content and to contribute to the preparation of these pre-service teachers for real-life situations that they would face in their profession, such as developing teaching materials and assessment tools. A general aim of the national high school curriculum is making learning relevant to the real lives of learners (DBE, 2011:4). The solving of real-life problems is a core requirement in the field of Consumer Studies (Smith & De Zwart, 2011:24). Involvement in real-life issues helps learners to understand learning content better and to construct meaning from their learning (Smith, 2007:10). It is therefore imperative to develop the skill to link learning in Consumer Studies to real-life situations, relevant to the South African context, in pre-service Consumer Studies teachers.

Though the participants did not mention critical thinking skills by name, evidence thereof emerged from the data. Two participants had thought critically and more broadly about the activities expected of them in the project-based learning module: "I have learned to think more broadly, I was initially prone to always use the easiest or closest answer, but now I have started to think in more depth and considered other options" (Bernadette). Tiffany mentioned that "... during the process [project-based learning] one thinks about new and better interesting ideas to improve the project for the learners". Improving, contemplating and developing ideas are key skills in entrepreneurship (Carwile, 2009:211) – one of the core aims of Consumer Studies (DBE, 2011:8) that teachers in the subject have to be able to teach effectively. This finding is in line with that of Ten Dam and Volman (2004:368), who mention that students who conducted project work or who worked on projects in groups reported the positive development of their critical thinking skills. McGregor (2009) identifies critical thinking as a prerequisite skill for Consumer Studies professionals, whereas Bell (2010:42, 43) cites its value for employees in their future careers. Critical thinking further adds value to the development of pre-service teachers, as it supports "alternative ways of viewing a problem, questions, possible solutions, and plans for investigating something" (Ten Dam & Volman, 2004:362), which is valuable in Consumer Studies education as well as in problem solving as part of entrepreneurship.

Collaboration between the five participants was expected to be problematic, as they came from four different universities and none of them knew each other before the start of the PGCE course. Remarkable and increasing levels of collaboration between participants however emerged during the study and in the findings. According to Tiffany, at the start of the study, participants were “getting along reasonably well” and towards the end of the study, they were “communicating at all times about any problems”. Participants' collaboration also expanded to include work outside the project work in the module and to include “everything about the PGCE” (Tiffany) – in other words, the whole qualification. Collaboration between participants included the sharing of ideas and resources, as well as supporting and motivating each other. Collaboration is considered a vital skill in the 21st century (Bell, 2010:39; Larmer & Mergendoller, 2012:3). In Consumer Studies education, collaboration skills are essential and high school learners are expected to complete a number of tasks and formal assessments in pairs (DBE, 2011:12), which have to be planned and managed by the teacher. Collaboration supports the linking of Consumer Studies learning to real-life situations, such as collaboration with partners in industry (Swafford & Dainty, 2010:209; Umalusi, 2014:103) and collaboration with members of the community, thus further enhancing the need for teachers to develop this skill.

The significance of these findings does not only persist in the potential it creates for the participants to apply these skills in their careers and in their personal lives, or in contributing to their preparation as pre-service teachers. Effectively implementing skills such as planning and time management in the teaching of Consumer Studies will foster the creation of a structured environment that is conducive to learning. Participants will also be able to employ these skills in order to contribute positively to the development of their learners by demonstrating good Consumer Studies practices that school learners can emulate. High school learners who emulate or develop skills such as successful time management, planning, organising, applying knowledge in real-life situations, critical thinking and problem-solving, might be more competent in entrepreneurship, which is a core aim of the subject Consumer Studies.

5. CONCLUSION

The findings from this study indicate that the implementation of project-based learning in the teacher preparation module allowed participants to experience the development of several important skills and Consumer Studies subject content in a practical, life-relevant manner. Project-based learning is therefore considered a suitable strategy to employ in higher education as part of the preparation of Consumer Studies teachers. Project-based learning was perceived as contributing to the development of participants' skills, underpinning a set of particular skills required of Consumer Studies teachers.

Implementing project-based learning as a teaching-learning strategy conceivably contributed positively to the professional attributes and skills of these pre-service Consumer Studies teachers, enhancing their potential to function optimally in the 21st century. Project-based learning also contributed to the participants' enjoyment of and motivation to learn, further emphasising its suitability for use in the preparation of these pre-service teachers.

Based on the findings of the research, it is recommended that project-based learning be employed as a preferred teaching-learning strategy in higher education as part of the preparation of Consumer Studies teachers as well as other services subjects. The active, life-relevant, gratifying and self-directed strategy supports learning and the preparation of these teachers for their subject-specific careers, and positively contributes to their preparation for the future. A set of particular skills, such as time management or collaboration skills, should be embedded intentionally into the structure of project-based learning to facilitate the development of those skills for future employment opportunities.

The potential that project-based learning creates for teacher preparation programmes will add value to teaching-learning of learners at school level. Developing learners' knowledge and skills in services subjects might impact learners' personal lives when they apply these skills, gained in CS classrooms, in future for their own small-scale production or entrepreneurial projects. Teacher preparation programmes may consider using project-based learning as a teaching-learning strategy to strengthen the preparation of teachers for these subjects.

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