Chapter Six

Conclusion

6.1 Introduction

The academic performance of schools in the Eastern Cape remains substandard, even though measures have been implemented to curve the phenomenon. The 2012 ANA results for Grade 6 indicated that numeracy and literacy were still at an alarming 27% and 43% respectively. Although better qualified teachers than before are employed, results remain dire. In the light of the above contextual issues, this study focused on student-teachers enrolled with the BEd Honours programme of the NWU through ODL, aiming to improve their teaching practice. In order to contextualise the study, I used the conceptual framework of Kruger (2012) for the implementation of ICTs for ODL. Though the framework is new and not yet generally acknowledged, it integrates current issues and technologies aimed at 21st century learning practices. Technological concerns relate to the digital divide mainly triggered by people left behind in diverse socio-economic circumstances, the after-effects of the imbalances of Apartheid, as well as language barriers (Blignaut & Esterhuizen, 2011).

6.2 Summary of the various chapters relating to the research journey

6.2.1 Chapter 1: Orientation

Chapter One provided an overview of the study and also stated the questions that guide the research. The aim of the study was to uncover how an SNS like Facebook could be implemented as an academic tool in order to support and enhance the learning experience of ODL teacher-students in the rural Eastern Cape. The isiXhosa speaking participants lived and worked as teachers in the former Transkei and Ciskei, mostly in rural areas. All were registered with the NWU for a BEd Hons degree. Coaching and scaffolding assisted them in compiling a research proposal for RSPR 671 module.

The research intervention that elicited data comprised coaching and scaffolding of the learning content relating to research methodology, as well as guiding the participants to engage with an SNS as learning technology in an academic environment. I created a support group on Facebook—FaceFunda—where they could, at any time, interact with peers and the facilitator. In order to capture data at the place where they originated, I used a phenomenological research design and qualitative case methodology. The research site related to the rural areas surrounding Queenstown. Purposive selected participants were chosen in order to supply the richest possible data. Data collection mainly took place through interviews, FaceFunda text, as well as the researcher's research diary.

Two phases of Atlas.ti™ analysis supported and managed the data analyses: (i) according to Bloom's aspects of affective learning as framework to uncover the affective experiences of the participants during the initial stages of learning with technology, and (ii) a secondary analysis of findings in order to uncover guidelines for the use of SNS technology for learning.

6.2.2 Chapter 2: The coaching and scaffolding intervention

Chapter Two described the coaching and scaffolding intervention which guided and enabled the rural teacher-students to interact with the learning content and employ technology to enhance their learning.

A Facebook support group (FaceFunda), provided a space where the participants could interact with one another and with the facilitator. The metaphor of a taxi compared the FaceFunda group page with a transport mode familiar to the participants that took them to new academic destinations. The participants positively accepted the metaphor as taxis were part of their everyday lives. A total of 34 teacher-students attended coaching and scaffolding sessions, of which 22 also joined the FaceFunda support group.

The need for coaching and scaffolding was greater than anticipated because the participants required assistance with the learning content, connectivity issues, as well as to conquer technological barriers. Facilitators provided guidance and support during the coaching and scaffolding to enable the participants to engage with Facebook and to compile their research proposals. Vygotsky's constructivistic learner-centred approaches (Constructivism, 2013) became evident when peers assisted one another in order to attain higher order thinking and technology skills. Bruner's spiral curriculum was applied when coaching and scaffolding built on knowledge, allowing the participants to connect existing knowledge to learning content which they could apply to their learning tasks (Theories of Learning in Educational Psychology, s.a.).

The participants regularly experienced challenges in their pursuit of professional development through ODL, which included inadequate Internet access, insufficient libraries equipped with relevant material for their academic needs, little support from peers and colleagues, and incompetence in using cellular phones and computers for academic purposes. The chapter culminated with photographs depicting the coaching and scaffolding sessions.

6.2.3 Chapter 3: Conceptual framework and literature review

Chapter Three described the choice, structure and implications of the conceptual framework for the implementation of ICTs for ODL. I examined relevant literature in order to establish an understanding of the listed aspects. The framework comprised pertinent aspects organised as five concentric layers:

the student; curriculum aspects; strategic principles; criteria of excellence; and outcomes of implementation of ICTs for ODL (Kruger, 2012).

Students, the kingpin of the intervention, were considered from their socio-cultural, educational and technological attributes. The context of the rural students posed specific qualities and challenges. Adult students value education in order to improve their professional development for a better life (Darkenwald & Merriam, 1982; Mdakane, 2011). Andragogy (Knowles, 1990; Mdakane, 2011) casts light on teaching and learning strategies for adult students. DE is a mode of learning through which adults can engage in study while they are full time employed and geographically removed from higher education institutions (North-West University, 2013). The challenges which rural teacher-students face in their quest for developing professionally while using 21st century technology are unquestionable (University of Johannesburg, 2011), as the digital divide has impacted their lives negatively. The chapter examined concepts like pedagogy, content and technology. The affective domain of Bloom's taxonomy formed the basis for identifying the emotional dimensions of student learning (Kharbach, 2011).

Ubiquitous technologies provide diverse dynamics to the learning, but also require pedagogical guidelines (Kukulska-Hulme, 2013). Pedagogical designs which combine the use of technology and face-to-face strategies contribute towards social constructivist teaching and learning methods (Brooks, 2013; De Villiers, 2010; Naidoo, 2002). Social constructivism affords possibilities to students from diverse cultures and backgrounds to learn collaboratively in formal and informal settings (Batchelor, 2011; Constructivist Theory, 2013). Content can be delivered through online environments in order to provide opportunities and guidance to students to take control of and responsibility for their learning.

Because of the emotional and physical distance between DE students and facilitators, as well as between students, it is important that students be permitted to learn independently. Facebook as an academic tool can innovatively enhance students' learning experience. Technology enables collaboration between students and facilitators. When students do not learn in their home language, they grapple with the concepts. Content specific language signifies students' abilities to express themselves in terms of the specific learning content. Reflective practice for facilitators and peers may be helpful in any learning environment (Hakkarainen *et al.*, 2007; Nagel & Verster, 2012).

The *criteria for excellence* related to how students participated in learning through the use of technology in order to enhance their learning. When students participate, they interact with the learning content, one another, and with facilitators. SNSs, like Facebook, may contribute to the affective learning experiences of students (De Villiers, 2010; Mayisela, 2013; Ravenscroft *et al.*, 2012). The other factors like mobility, networking, interactivity, personalisation, flexibility and accessibility are interconnected and all contribute towards excellence of learning.

Critical outcomes that should be achieved while using ICTs in ODL, include critical thinking skills, using of ICTs, self-regulated learning, and developing lifelong learners. Critical thinking involves analysing, synthesising and evaluating of competencies. The competent use of ICTs has become essential to be successful in the 21st century (Loyens *et al.*, 2008).

6.2.4 Chapter 4: Research Design and Methodology

Chapter Four delineated the research design and methodology used during this research. The purpose of this research was to search for the understanding that would enable the teaching and research communities to support students better, as well as to provide guidelines to the NWU for the support to ODL teacher-students in rural communities on the academic use of Facebook.

I have intimate knowledge of the culture of the participants in the study as I was born and bred here, and had been working in the Eastern Cape. This qualitative bounded case study was conducted from a postmodern view, recognising the participants as subjects of their environment. The study related to a phenomenological point of view to describe the lived experiences of the participants (Burrel & Morgan, 1979; McMillan & Schumacher, 2001a). From the pragmatic paradigm, I conducted a descriptive explorative analysis to describe the insights and relationships that emanated from the research.

Non-probability purposive sampling selected participants for the study (Creswell, 2008; Merriam, 1998b). The main criteria, which contributed to the boundedness of the study, included that participants had to be isiXhosa home language speakers, were teaching at schools in the former Transkei and Ciskei, and were enrolled with NWU for the BEd Honours degree. The site from where the participants originated, was the rural areas around Queenstown in the Eastern Cape.

Data collection strategies comprised textual data from the FaceFunda group page, a focus group interview, individual interviews with six participants, two interviews with the IT expert, an interview with the facilitator of the focus group after observing a coaching and scaffolding session, and the researcher's reflective diary. Data analysis followed the methodology of constant comparative analysis (Boeije, 2002) through Atlas.ti™ to analyse the integrated data set. The researcher's role related to one of personal involvement in every aspect of data collection, analyses and reporting. Although formal ethical considerations were adhered to, consent for posting of images and messages, recordings and video clips were treated with sensitivity. Measures used to ensure the integrity and responsibility of the research related to:

- trustworthiness: the detailed descriptions of the context of the study
- triangulation: the use of a variety of data gathering methods
- credibility: the degree with which I familiarized myself with the culture of the participants
- validity: the extent to which the findings and conclusions are consistent, sound and believable

- reliability: the degree to which the results can be repeated.

6.2.5 Chapter 5: Data analysis and interpretation

Chapter Five presented a detailed analysis of the data assigned to Atlas.ti™. The integrated dataset comprised eighteen transcribed textual data documents from individual interviews, a focus group interview, FaceFunda text, the researcher's reflective diary and the six coaching and scaffolding sessions. The data analyses followed Saldana (2011)'s emotion coding methodology according to the classical framework of Bloom's taxonomy (Kharbach, 2011) of affective learning (§ 3.2.2.1.1). Three patterns emerged which linked the participants' affective experiences during coaching and scaffolding sessions and the academic use of Facebook.

Table 6.1 presents an executive summary of the patterns, themes and codes which emerged from the analysis of the gathered data as an inventory of findings. Three patterns of findings emerged: (i) emotions while learning with technology, (ii) experiences with technology, and (iii) need for support. Students' affective experiences were grouped to reflect sides, extending from competence to incompetence while using technology in an academic environment.

Table 6.1 Inventory of findings from the analysis of the integrated data-set relating to coaching and scaffolding, and SNS support for rural teacher-students in the Eastern-Cape

How can the affective learning of ODL teacher-students in rural Eastern Cape be supported through academic Facebook?	
Pattern of emotions while learning: Participants...	
Competence	• nurtured hope that they would successfully complete their studies with additional coaching and scaffolding, and technological support • fostered expectations that they would receive effective support through the academic use of a SNS • socially and academically cared for one another through the supportive environment of communities of learning • understood that technology increased interaction between participants, the learning content and the facilitator in order to become competent • contributed towards course interaction through mutual support and peer tutoring • sustained various affective learning aspects during engagement with an academic SNS
Incompetence	• experienced the inability to interact with the learning content; had insufficient study skills, and were unable to express themselves in English as language of learning • braved inadequacies to cope with the demands of distance learning • faced confusion and embarrassment which hindered optimal learning • lived with sustained indifference to interventions aimed at overcoming incompetence • underwent disabling anxiety to interact optimally with learning content • endured fear resulting in incompetence when engaging with learning content
Pattern of experiences with technology: Participants...	
Technophilia	• developed optimism that they would conquer technological challenges of accessing Internet-based learning content • incremented their willingness to participate in learning with and mastering technological challenges which they experienced • broadened their confidence as their technological competencies matured • exhibited self-reliance as they engaged with and internalised knowledge

How can the affective learning of ODL teacher-students in rural Eastern Cape be supported through academic Facebook?	
Technophobia	• held misconceptions about SNSs as they had not grown up with technology and believed that SNSs were social tools for the youth and not academic tools • suffered technological incompetence preventing them to benefit from the affordances of the Internet • felt uncertain of how SNSs could enhance learning experiences • fell short of attending coaching and scaffolding sessions or registering on the SNS support group experienced frustration due to deficiency to overcome individual barriers
Pattern of need for support: Participants...	
Competence	• manifested enthusiasm, excitement and eagerness to participate in coaching and scaffolding opportunities, and to participate in the SNS • assisted and supported one another as they experienced emotions relating to kindness, goodwill, care, concern, co-operation and attentiveness which fostered engagement in the learning support community • presented increased engagement in and commitment to learning group activities in order to foster higher order thinking for academic achievement • developed empathy, understanding and compassion for one another in order to foster responsiveness, openness and group solidity • experienced encouragement to engage in and benefit from the intervention • lessened their initial feelings of incompetence as self-assurance and confidence matured • recognised and acknowledged assistance, encouragement and support which fostered professional development
Incompetence	• perceived themselves as unsupported, powerless and helpless when they engaged minimally with support • procrastinated while forwarding excuses for non-attendance of support opportunities • tolerated time constraints which employment and family responsibilities demanded • withstood trauma when real-life incidents prevented them from engaging with support opportunities

The emotions while learning with technology related to participants feeling competent, were hopefulness, expectations, caring, understanding, peer support, and positive affective emotions. Feelings of incompetence surfaced which included the inability to interact with the learning content, inadequacy of coping, confusion, indifference in overcoming barriers, anxiety and fear which caused incompetence to engage with the learning content.

Technophilia (enabling or positive emotions) and *Technophobia (*disenabling or negative emotions) represented the pattern of learning with technology. The four codes related to the theme of technophilia were optimism, willingness, pride, and confidence. The four codes relating to technophobia were misconceptions, incompetence, uncertainty, and frustration.

The pattern of need for support was linked to reflect competence to incompetence while using technology in an academic environment. Competency related to enthusiasm, helpfulness, motivation, empathy, perceptiveness, participation, confidence, and feeling supported. Experiences which caused emotions of incompetence comprised unsupported, avoidance, stressed, and traumatised.

6.3 Addressing the three sub questions relating to this research

In order to address the research question which guided the research: *How can the affective learning of open distance learning teacher-students in the rural Eastern Cape be supported through academic Facebook?,* three sub questions assisted the researcher to uncover the various aspects. The sub questions were: (i) What are the implications of affective learning for SNSs?, (ii) What are the critical affective learning aspects for coaching and scaffolding opportunities on Facebook? and (iii) What are the guidelines for the academic use of Facebook for peer and facilitated learning support? Subsequently, each question will be addressed individually to reach the final conclusion of the research question.

6.3.1 **Sub question one:** What are the implications of affective learning for SNSs?

Emotions determine the commitment with which teacher-students engage in learning experiences. Therefore, it was vital to create a supportive learning environment to foster social cohesion among student-teachers and support them for technological interaction. Teacher-students engaged through their *willingness* to learn from their peers. Coaching and scaffolding created a readiness to engage with the learning content, as well as to connect through technology. *Positivity* created a readiness to engage with technology—even if it involved conquering of technological barriers. Learning should be *valued* in order to enable engagement with peers and technology. *Organising and conceptualising* of learning content should become part of the frame of reference of teacher-students. The highest level in the affective domain, *characterising* of knowledge, integrated learning content into their personal lives.

6.3.2 **Sub question two:** What are the critical affective learning aspects for coaching and scaffolding opportunities on Facebook?

The critical affective learning aspects for coaching and scaffolding on Facebook related to three distinct patterns, namely (i) emotions while learning with technology, (ii) experiences with technology and (iii) the need for support. Each theme related to aspects which enabled competency as well as aspects which lead to incompetency.

Emotions which teacher-students experienced while learning with technology related to feelings of competency, and involved hoping that coaching and scaffolding opportunities on Facebook would assist them to pass the module. Expectations were raised that teacher-students could master the learning content. When teacher-students got to know one another, a caring environment was created where they felt safe, understood and supported. It was important that teacher-students comprehended the learning content and were inspired to achieve academic outcomes. The attainment of these expectations was made possible through the participation in coaching and scaffolding opportunities and the SNS. Clarity set in when facilitators guided teacher-students through the requirements of the

module, as well as through peer tutoring. The gratitude of teacher-students became evident as the participants regarded the community of learning on FaceFunda as valuable and inspiring. However, aspects of uncertainty, inadequacy, confusion and indifference caused teacher-students not to engage with the learning content, or conquer technological fears.

The second aspect, which related to teacher-students' experiences with technology while learning, involved enabling features like: optimism, willingness, pride and confidence. Coaching and scaffolding opportunities on Facebook supported the teacher-students to feel optimistic about their learning, which raised their willingness to learn when they became proud of their achievements of overcoming technological challenges. As they reinforce their technological skills, their confidence increased and they applied the acquired knowledge to different situations. Technophobia is a negative emotion which proved to consist of misconceptions, incompetence, uncertainty and frustration. Many teacher-students lived with misconceptions about the positive impact that Facebook could have in academic environments. Incompetency with technological devices resulted in teacher-students being unable to use Facebook to enhance their learning experience. The uncertainty of how to optimally use their own devices, resulted in frustration about the learning environment. It is vital to assist teacher-students to develop technological skills to enable them to use 21st century tools in order to support their academic achievement.

The third aspect comprised the need for support which teacher-students required for learning. During coaching and scaffolding, teacher-students' competency levels increased through feelings of enthusiasm about their learning, and wanting to help one another through peer tutoring and feeling motivated to learn. Within the supportive community of learning, teacher-students displayed empathy towards one another which fostered group solidity and unity which created a safe environment where they could experiment. The more the teacher-students participated on the Facebook group page, the more support they received from one another and the facilitator, which enabled more academic involvement which could lead to success. When the teacher-students felt confident about their participation, their confidence increased and they became willing to assist others. When they identified with peers in a community of learning, they felt supported. However, teacher-students who did not make use of opportunities to become part of the learning community, felt unsupported and lonely. They avoided participation and allowed the pressures of everyday life to keep them away from coaching and scaffolding opportunities. Real life traumatic events withheld teacher-students to participate and become part of the learning community.

6.3.3 **Sub question three:** What are the guidelines for the academic use of Facebook for peer and facilitated learning support?

The findings of the data analysis, presented as an inventory (Table 6.1), were assigned to Atlas.ti™ for a secondary analysis in order to uncover the guidelines hidden in the inventory of findings (§ 4.6; Figure 4.7, Tables 4.2 and 4.3). The secondary analysis related to twelve codes and four themes:

(Addendum 6.1): (i) coaching and scaffolding support, (ii) technological support, (iii) peer support, and (iv) communication with the higher education institution (Figure 6.1).

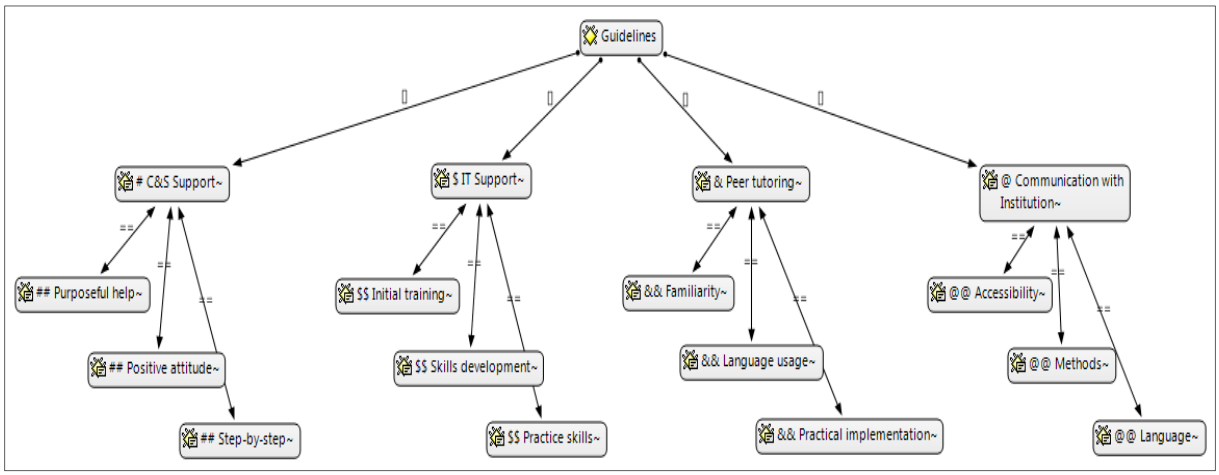

Figure 6.1: Guidelines for the academic use of Facebook for peer and facilitated learning support

Figure 6.1 lists the structure of the secondary analysis relating to the findings from the integrated dataset in order to uncover the guidelines for the support of rural students in the Eastern Cape. The secondary analysis uncovered the emerged patterns from the analysis of the inventory of the integrated dataset.

Coaching and scaffolding could provide contextual support to relevant learning content areas integrated with technology training. Coaching and scaffolding should provide: (i) training matched to the competencies of the learning community; (ii) affective learning could assist in supporting teacher-students to conquer their insecurities; and (iii) support building on teacher-students' initial learning to enable them to achieve learning outcomes.

Technology support relates to three aspects: (i) teacher-students should be trained for the academic use of SNSs; (ii) teacher-students should develop skills in order to conquer their incompetence regarding technological challenges of accessing Internet for engaging with learning content as well as technology-based peer support; and (iii) teacher-students should be provided with regular opportunities to practise their IT skills in order to eradicate misconceptions about technology, for them to benefit from the affordances of learning with technology.

Peer support enhances the learning experience of ODL students. Three aspects relate to this theme: (i) familiarity with learning content and technology enables teacher-students to engage with the learning content and contribute towards enhanced learning experiences; (ii) explaining learning content in their own language to one another contributes towards enhanced learning experiences; and (iii) practical implementation of peer support to others linguistically not so competent.

Communication opportunities relate to the onus of the higher education institution to communicate with the teacher-students regarding the purpose of using technology-enhanced learning. Communication with the NWU include aspects like "bridging of language barriers and the distribution of information and general communication" (Mdakane, 2011, p. 133). Three aspects relate: (i) provision of access to technology and the Internet; (ii) modes of technology-based communication should be explored in more detail; (iii) more provision should be made for student-learners who do not understand academic concepts because English as language of learning does not support them sufficiently.

6.4 Recommendations

While distance education provides options to teacher-students who find it difficult to study at residential universities in order to upgrade their qualifications as part of professional development, many barriers prevent them to successfully interact with the learning content. To minimize the feelings of isolation in DE, this study, as part of initial investigation into the use of mobile technologies to provide learning support to ODL teacher-students, uncovered that SNSs could contribute towards positive learning experiences. However, coaching and scaffolding should be designed for remote students to learn the skill of engaging with the learning content in learning group contexts. Technology support should be a strong component of such coaching and scaffolding interventions and the aim of the new peer and facilitator support should be communicated clearly to the teacher-students.

6.5 Future research

The academic use of SNSs like Facebook to support rural teacher-students in ODL programmes has not yet been fully utilized in South Africa. This study, designed to contribute findings to a large project, did not address all the questions one would expect from a freestanding project. In follow-up studies, the following pertinent questions should be addressed:

(i) Which other technologies which are already familiar and available to rural ODL students, could be used to support teacher-students? Examples could relate to Whatsapp™, Mxit™ or SMS, or other hardware solutions.

(ii) What should the optimal curriculum and time allocation of coaching and scaffolding be to ensure that rural teacher-students can engage with the proposed technology to adequately support interactive learning?

6.6 The value of the research

The value of the research is contained in the understanding that technology-enhanced learning contributes to positive teaching and learning experiences of teacher-students at a South African higher

education institution. Teacher-students in rural and remote areas far away from contact centres can receive support in order to enable them to engage with learning content. In this context, the research contributes to:

- how coaching and scaffolding can support rural teacher-students' learning experiences in an ODL programme
- how technological support can develop the technological skills and competence of teacher-students in the use of SNSs in an academic environment
- how peer tutoring can contribute to a community of learning to support rural teacher-students in their learning
- how communication from the higher education institution can contribute towards the support of rural teacher-students.

6.7 Limitations of the study

As this qualitative case study enfolded, limitations became apparent on two levels. The one, on the level of the methodology employed during the study, and the other, the practical research limitations.

Research limitations related to the methodology:

- the limitation of the research methodology included the implementation of a qualitative case study to this specific population group in the Eastern Cape, and it could be problematic to transfer these findings to other individuals or groups.

Research limitations related to the practical research:

- the research should have been executed over a longer period of time, because the participants needed technology training, and should have had more time for practising their skills
- the incompetence of the teacher-students to use technological devices prevented the full use of Facebook as an academic tool
- the uncommitted attitude (never knowing who would arrive at sessions or how active their participation on Facebook would be) of the participants prevented optimal engagement
- the cost involved in Internet use prevented the participants from using the Internet as often as they would have liked to
- the sustainability of the project: I created the intervention to assist teacher-students to enable them to write their proposals for RSPR 671 module, and after eight weeks of coaching and scaffolding, the research project finished
- the original study leader incorporated this research as part of her larger study. She resigned from NWU in April and the project was also cancelled. However, I was obliged to use her conceptual framework for the implementation of ICTs for ODL, Facebook as technology, and the participant selection. We had to adjust my study very quickly

- I am the Dean's prestige bursary holder for 2013 and had to submit my dissertation at the end of October 2013. The time constraint left me with six months to complete my degree. My study leader and I have worked purposefully to present the best possible research.

6.8 Reflection on my personal research journey

The FaceFunda taxi took me on an unimaginable and exciting journey which I never envisioned. Yet, I am so grateful for the opportunity to board the taxi that uncovered so many learning experiences. Close contact with adult learners of another culture made me aware of weaknesses and strengths of learning environments. As people we have much in common. Differences are overshadowed by similar challenges and emotions experienced during "dark and lonely" distance education. It was invigorating to discover that the participants and I together conquered technological barriers—competencies we could use in other contexts as well. I am encouraged by conquering anxieties about teacher-students' participation, as well as my insecurities about the execution of this study. Looking back, I realise it was an emancipatory experience for me, as well as for the participants. After all the planning and gathering of data, I had to learn how to take a step back and let the data do the talking—the complexity of it all left me speechless.

After the resignation of my initial study leader, who upheld the expectation of me being part of a larger project with peer support and fitting into a bigger research picture, my hope dissipated. My journey would once again be dark and lonely. However, my newly appointed study leader negotiated the heavy traffic and the passengers in the taxi and I arrived safely and on time at the intended destination. During the journey, I gathered new insights and am humbly aware that the learning taxi could take me much further into the future.

Learning with technology places the world at one's fingertips on the steering wheel of one's own taxi.