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MOBILE LEARNING AND ITS INFLUENCE ON HOW TUTORS' TUTOR

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Dedication

This full dissertation is in honour of my late Mom, Patricia Robertson who in the early stages of this dissertation encouraged me and believed that all things are possible. This one is for you Mommy, I completed and I know you are smiling down from heaven and saying: "Well done!"



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- Thank you to the voluntary participation from all students and tutors for being part of this journey.

Preface

A section of this research presented in this dissertation has been submitted for publication and are listed in the end of this section. Portions of this research have also been presented at national and international conferences.

Robertson, D, N., and Dasoo, N. (2018). Mobile learning and its influence on the tutoring process. Global Science and Technology Forum (Eds.), In the *8th Annual International Conference on Education and e-learning 24 – 25 September 2018* (pp.65-70). Singapore. Global Science and Technology Forum.

Robertson, D, N., and Dasoo, N. (2018). Mobile Learning: Tutors authentically using Facebook as a discussion forum. In the *Book of Abstracts 2018 SAERA Conference* hosted by NWC (pp. 68-69). Pretoria.



Abstract

The autonomous nature of communication when referring to space and time influences mobile technology forces Higher Education institutions to rethink how tutoring should be conducted. It is my contention that advances in mobile technology has forced institutions learning to reevaluate their tutoring systems. New communications devices and platform will have to be incorporated into education to strengthen teaching and learning especially in tutorials. It is a fact that today students are digital natives. It is a fact that many of them own or use a technological device. This combination is a recipe that will mediate mobile learning anywhere and anytime. This investigation aimed to explore tutors potential to introduce mobile learning in the tutorials conducted at the University of Johannesburg's Faculty of Education. The study further considers the tutors potential to motivate students to use their mobile devices for learning beyond socialising on social media. This is by supporting mobile learning online. This exploratory qualitative study sought to understand the perception of tutors and students about mobile learning through in-depth reviews of the literature, focus group interviews, questionnaires and online log data responses to provide an understanding of tutors' mobile interventions and students' mobile use in tutorial activities to understand an aspect of the tutorial system at the University of Johannesburg. The data was thematically analysed. The results suggest that tutors can encourage students to use their devices for academic purposes. The conclusion is that the inclusion of mobile learning as part of the tutorial experience can support learning online beyond the traditional physical and formal tutorial.

KEY TERMS *Activity Theory, Communities of Practice, Digital Natives, Mobile Devices, Mobile Learning, Mobile Technology, Tutors, Tutorials, Tutoring, and Virtual Spaces for learning*

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Abbreviations

AT	Activity Theory
CoP / CoPs	Community of Practice / Communities of Practice
VPCoP / VPCoPs	Virtual Professional Community of Practice / Virtual Professional Communities of Practice
HEI / HEIs	Higher Education Institution / Higher Education Institutions
UJ	University of Johannesburg



Chapter 1. Overview

1.1. Introduction

We are living in exciting times for society in general and academia in particular, as Higher Education Institutions (HEIs) have a unique opportunity to shift from traditional teaching and learning perspectives, to positioning themselves at the forefront of adopting, if not designing technologies for the renewal of teaching and learning. South Africa has welcomed mobile learning and as a result we have proven to be competently capable to introduce our own contextually significant tools (Veletsianos, 2010; Ivala and Gachago, 2012; Gachago et al., 2013; Ng'ambi et al., 2015).

In spite of the progressive inclusion of mobile learning approaches within HEIs, very little research has been done on tutors who use mobile learning and social media for teaching and learning within the tutoring process. Current studies on tutoring are primarily centered on evaluating tutorials (Shaw, Carey and Mair, 2008; Coughlan and Stephen 2011; Hassan, 2017) and enhancing learning while improving the academic performance of tutees (Topping, 1998; Comfort, 2011; Carter and Yam, 2013). Other studies focus on the transferring of discipline-specific skills (Underhill and McDonald, 2010) and determining its effectiveness in the enhancement of learning (Truuvert, 2014).

It has been however predicted by the New Media Consortium's Horizon Report (2014), that in the next five years trends in the use of technology in teaching and learning will be conducted (Johnson et al., 2014). These will include the universal and increased use of social media in education for collaboration between educators and students. It will create virtual professional communities of practice across institutions such as online learning spaces to provide opportunities for group problem-solving and peer-to-peer collaboration among others (CHE, 2014). In retrospect, these predictions have been fulfilled. Facebook is a social network application used as a discussion forum for collaboration in communities of practice that is supported and implemented by tutors.

There is need to focus on "communication networks through the Internet to improve pedagogy" (Ng'ambi et al., 2016, p.3). For example, Facebook is known and widely used to bridge the communication divide (Gachago et al., 2013, p.94). The user-driven Facebook application is a social networking tool that has created an "increase in pedagogical investigations ... for educational purposes" (Ng'ambi et al., 2015, p.10).

Several South African researchers promoting authentic learning have embarked on documenting the use of Facebook in learning practices such as microbiology, engineering (Ivala and Gachago, 2012; Ng'ambi et al., 2015), and education (Robertson and Dasoo, 2018, pp. 65).

The purpose of this study is to fill an existing knowledge-gap. I argue that there is a gap in the tutoring literature concerning the conceptual analysis that seeks to understand the environment of tutorials and how tutors manage and effectively tutor using technology.

In the remainder of this introductory chapter, I present the rationale of the study, the aims and objectives of the study, the research questions, and the structure of the dissertation.

1.2. The Rationale of this Investigation.

The context of this study is the University of Johannesburg (UJ). The university set out to establish new and effective ways on teaching and learning. The university disseminated eight strategic goals to fulfil its mission by 2020. The university's second goal is teaching and learning using 21st Century technology. It states, "[it stakes its] reputation as a comprehensive institution with a unique identity in the higher education sector [based on] the stature and quality of its scientific and technology-rich programs and its scientific and technology-driven research, innovation, and technology transfer" (University of Johannesburg, 2011, p. 5). With this ambition, the university embarked on infrastructural changes required to accommodate mobile learning access over its four campuses. According to Louw (2015, p.294), UJ boasts to be "one of the largest wide area networks in the southern hemisphere that is Wi-Fi compliant with various hotspots on its campuses".

Keeping up with global educational expectations is crucial for UJ. Indeed, current social and economic conditions emphasise the need for HEIs to produce skilful, knowledgeable and resilient students. Generic skills, flexibility, lifelong learning skills and keeping up with information technology are skills graduates need to be employable across the globe in the 21st Century (Moore, et al., 1998, p. 10). So, implementing a tutoring system that is compliant with modern technological advancements is consistent with the global expectation to equip students with skills that give them the edge in the 21st Century. A tutoring system would meet student needs, but for tutors to work effectively, since they work closely with students, training and development would empower them to both understand and meet those needs and the institutional tutoring goals (Underhill, 2009, p. 2; Clark, 1998, p. 2). This study suggests that if tutors are fully equipped, trained, prepared

and afforded the opportunities to implement relevant methods such as mobile learning into tutorial environments, it will contribute to meaningful teaching and learning.

The student profile at UJ is diverse; it demands change to establish successful tutorial programmes (Teaching and learning report, 2016). Tutor training and development should equip them with skills required to support effective and integrated tutorials. Accordingly, their role as tutors would be strengthened if they focused on subject-specific support, teaching and learning support, and student academic development. Aspect of training and development at UJ include the adherence to departmental rules and expectations as well as attendance of all meetings and orientation and training sessions as scheduled for tutors by both the Unit for Tutor Development and the relevant academic department. Other facets of training and development consist of record tutorial attendance; marketing of tutorial and academic/psycho-social UJ support services and tutor report submission. Crucial aspects of tutoring such as student consultations, tutorial sessions, liaising with the course coordinator/lecturer as well as marking assignments and tests are further considered (UJ Tutoring and tutor policy, 2016, p. 8).

According to Brooks (2008, p. 168) and Jaeger (2016, p.14) the tutoring concept as instructional method, dates to Socrates and the Socratic method. This approach consists of a partnership between the more experienced student (tutor) and the inexperienced student (tutee). It ensures that knowledge and practices are simplified and passed on to the tutee. Tutors have essentially remained the same. This implies that relationship of tutor and a tutee has not changed. However, over time what has changed is how the instruments of tutoring have progressively changed. For example, in the last twenty years digital tutors have been gradually introduced as technology has developed. Digital tutoring has complemented contact tutoring sessions. Contact is now through online means only, such as through using the Internet on a digital device. In several studies digital, digital tutoring is associated with distance learning (Kerr, 2011, Van Lehn, 2011). This study suggests that traditional approaches to tutoring and digital approaches to tutoring constitute an interesting area for inquiry. Accordingly, this study focuses on integrating digital tutoring and the traditional approaches to tutoring to provide optimal and effective tutoring within and outside of the allocated tutorial timeslot.

Tutoring in the higher education context (HEI) is sub-divided into the following categories: one-on-one tutoring and one-to-many classroom instruction (*Figure 1.1.*). The one-to-many classroom instruction is referred to as a tutorial. The tutorial setting within UJ is planned

and structured in such a way that tutor(s) work with many (one-to-many) within the settings of a tutorial. Therefore, a key aim of this study is to find efficient ways of how to manage the one-to-many tutorials.

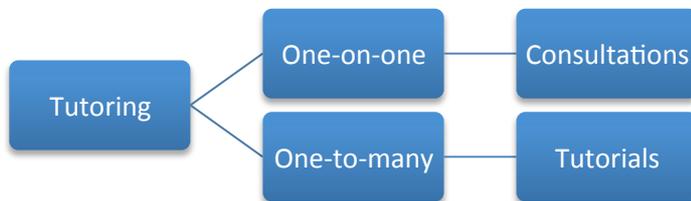


Figure 1.1: Tutoring concept (Source: Own)

In this regard, this inquiry primarily focuses on tutors and the inclusion of technological devices in the one-to-many tutorials through mobile learning. Wireless connectivity makes learning through iPhones, tablets, smartphones possible and this results in mobile learning. A significant advantage of these devices is they enhance students learning experiences anywhere and anytime. Mobile learning is incorporated in tutorials to supplement tutorials with additional functionalities such as Facebook discussion forums, for educational occurrences that would otherwise not be possible. It is a fair point to suggest that mobile learning in this study improves the productivity and efficiency of mobile workers (tutors). It prioritizes delivery of information in time and in context for their immediate attention (Kukulska-Hulme, 2010).

Although one-on-one instruction has been more effective than the one-to-many classroom instruction (Bloom, 1984), it is not economical to provide every student with an individual tutor (Koedinger and Corbett, 2006). This is where technology becomes an immediate and important benefit in the lives of students (Pearson, 2018). It makes it possible to reach larger groups constructively by supporting and creating learning opportunities. Students may not be capable of using technology for learning opportunities as skilfully as they use it for social interaction, and require support to do so (Pearson, 2016).

Tutoring is not without challenges. Kukulska-Hulme et al. (2012) indicates that HEIs workforce is adapting to advancements in technology for teaching and learning. HEIs are identifying exemplars in workplaces to work with the lecturers. These exemplars include tutors whose primary mandate is to support both the lecturers and students (Underhill, 2009). This study has already indicated that tutors need proper training and development

to support students. Without proper training, discussions by students tend to revolve around the tutor (Cheung and Hew, 2011), delayed duties and unavailability of tutors (Klimova and Poulouva, 2011), inadequate skills (Amoah, et al., 2018) and insufficient support given (Sundvik, Masalin and Hervonen, 2016).

It is evident from the discussion above that understanding the transformation of tutoring into the digital and technological age within HEIs is crucial for providing an exciting, supporting and effective tutor and tutee experience. On this basis, this study is justified; it holds the promise of improved tutoring and learning experiences.

1.3. Research Aim and Objectives

The general aim of the study is to determine how tutors may enhance the tutorial experience of students with the integration of mobile devices.

In order to accomplish the general aim of the study the following objectives will need to be accomplished:

- a) To determine students' perceptions and experiences of mobile learning;
- b) To ascertain the influence of mobile learning on the tutor, tutoring and the tutorials;
- c) To investigate how tutors might bridge the digital divide gap between students and lecturers;
- d) To examine the contributions of pedagogical development in HEIs in South Africa by analysing the efficacy of mobile learning.

1.4. Research Methodology

A qualitative methodology was used to collect data for this case study. Mohajan (2018) states that the "qualitative approach is concerned with the individual's opinions, feelings, and experiences to discover unanticipated occurrences". The qualitative approach is suitable because it allowed the researcher to work with perceptions and experiences of tutors about mobile learning at the University of Johannesburg. Although this dissertation is qualitative, I have used some descriptive stats in form of numbers and graphs for illustration only.

Focusing on tutors perceptions and experiences about mobile learning requires a specific approach, hence, a case study was chosen for the investigation of tutors and mobile

learning. Merriam (2009) says that the use of a case is suited to examine programmes in order to enhance an understanding that may lead to influence practice. In this investigation, the specific case consists of the students and tutors in the second year of Education Studies (2B) module, a bounded context at UJ.

This study is also an explanatory case study. Yin (2009) observes that an explanatory case study examines the research issue at a deeper level. This approach emphasises depth analysis of data in order to explain in this case tutor's perception and experiences of mobile learning.

The different data collection instruments used in this study include questionnaires, focus group interviews and an online discussion forum.

The study used purposeful sampling of 470 students enrolled undergraduate in their second year of Education Teaching Studies (2B) module (TST20B2). Five tutors and one senior tutor participated in the study.

This study used activity theory and community of practice as its conceptual frameworks to explain the perception of tutor on mobile learning (Hashim and Jones, 2007). The data from questionnaires, focus group interviews and an online discussion forum were compiled in Excel Spreadsheet and thematic content analysis was used, to analyse it (Creswell, 2012; Terre Blanche, Durrheim and Kelly, 2006).

1.5. Research reliability, validity and trustworthiness

An important aspect of research trustworthiness is reliability and validity. Miles and Huberman (1994) refer to "reliability as quality control". When considering reliability, the collection of data should be able to be repeated. Validity refers to the accuracy of the findings using certain procedures (Creswell, 2009, p. 190). Important tactics to consider are the "multiple sources of evidence, establishment of a chain of evidence, and having the draft case study report reviewed by key informants" (Yin, 2009, p. 212).

Multiple sources through means of triangulation were considered in this study to ensure reliability, validity and trustworthiness. Through triangulation, the combination of questionnaires, focus group interviews and the analysis of online discussions were checked against the findings. For example, what was discussed in the focus group interviews could be checked against what was answered in the questionnaires or the online discussion forum responses. Through audit trail considerations, I collected data

transcriptions, signed consent forms, ethical clearance documents for safe keeping and also included examples thereof in the report *Appendix 5*, where readers can verify that the findings are not false (Schwandt, 2007). Furthermore, consultation sessions with my supervisor and careful consideration of my supervisor's views and perceptions were reflected on to correct any mistakes during the research process (Shenton, 2004). I engaged with other academics during the research process to obtain critical feedback and different perspectives on my assumptions.

1.6. Ethical considerations

Approval was obtained from the Ethics Clearance Committee of the Faculty of Education at the University of Johannesburg (Appendix 1). Consent was obtained from the participants prior to participant interviews, discussions and questionnaire completion, after the researcher had explained the aim of the research. Participants were further informed that engaging in the study by sharing their experiences would have no impact on their academic grades and their participation in this research was voluntary without facing any form of penalty should they wish to withdraw. The researcher has complied with all the ethical considerations.

1.7. Clarifications of concepts

1.7.1. Mobile device

Mobile devices include: "Hybrid mobile phone/personal digital assistant (PDA) devices known as smartphones, iPhones, tablets, cell phones, PDAs, MP3 players, portable game devices, handhelds, tablets, and laptops abound" (Traxler, 2007, p.9). Similarly, these mobile devices are also termed "always connected" wireless machines. Mobile devices allow people to engage in activities and transactions in locations and situations where it never used to be possible or it was much more difficult, such as during a bus ride or even while walking.

1.7.2. Mobile learning

Mobile learning is the efficient and effective use of wireless, digital devices and technologies to enhance learners' individual outcomes during participation in learning activities. Mobile learning has captured the imaginations of many educators in higher education because it allows them to capitalise on the features and tools embedded within powerful mobile devices (Hung and Zhang, 2011).

1.7.3. Tutorials

A tutorial is an instructional method from one-to-many in a classroom or lecture venue setting (Kerr, 2011). In most cases, it is smaller classes taken from the larger classroom setting where questions are asked, and certain unclear aspects are clarified. Participation within activities is expected and discussion is encouraged. In the case of this study, smaller tutorial groups were created within the large class setting, which meant that students were divided into smaller interactive groups within the larger class setting under the guidance and facilitation of a tutor coordinated by a senior tutor.

1.7.4. Tutoring

Considered one of the oldest instructional methods, tutoring involves a partnership between the more experienced student (tutor) and the inexperienced student (tutee) so that knowledge and practices are learnt possibly in a simplified form (Van Lehn, 2011). Gradually with technological advancements, computer tutors were introduced. Tutors have the option to tutor online through instructional methods that are either one-to-one or one-to-many.

1.8. Chapter division

1.8.1. Chapter One

This is an introductory chapter to the whole study and highlighted the rationale and background of the study, the research methodology and the key concepts of the study.

1.8.2. Chapter Two

In this chapter, I review the literature on mobile learning and the opportunities it offers for mobile learning.

1.8.3. Chapter Three

In this chapter I discuss the theoretical framework for this study, namely activity theory and community of practice and show their relevance in the study.

1.8.4. Chapter Four

I outline the research methodology, design and data collection methods selected for this research study within this chapter. With deep focus on the method of obtaining, organising, investigating and examining the data, to answer the research questions.

1.8.5. Chapter Five

In this chapter, I analyse and evaluate the research findings and show how it is related to the literature review and theoretical frameworks.

1.8.6. Chapter Six

This chapter summarises the research focus and the contribution to theory and practice.

1.8.7. Chapter Seven

In this concluding chapter the recommendations for future research and limitations to the study is discussed.



Chapter 2. Literature Review

2.1. Introduction

This chapter reflects on the review of the literature concerning mobile learning and how digitally conscious tutors and their students (tutees) incorporate mobile devices in the learning processes. This review is based on the attempt to answer the research questions:

- a) How do tutors use mobile learning to enhance the way in which they tutor?
- b) How do students experience the implementation of mobile learning during tutorials?

In this chapter, I begin by explaining what the tutor concept entails, followed by description of mobile learning, mobile devices with emphasis on the challenges and benefits that exist within the tutorial environment. Further deliberation on Facebook as a tool for learning is explored with consideration of related challenges and benefits. At the conclusion of this chapter I present a summary of important features.

2.2. The tutoring concept

The origin of the word tutor is unknown but etymologically it derive from an old French word, *tuteur*, It means “private teacher, custodian”. In Latin it is *tutorem*; it means watcher or gaurdian. For Lázaro (2002) tutors in HEIs guard the development of the student. Veiga et al., (2008) concurs that tutor at HEIs level is generally expected to guide students in their knowledge growth aimed at promoting students’ integration into the HEIs context, inform students on academic choices, career options, encourage participation in the various activities of university life and reflect on the development of students in their academic and personal lives.

To tutor at HEIs requires the ability to contribute to and function in a number of dimensions. Boronat, Castaño and Ruiz (2007) point to an administrative dimension provided under current legislation. Consideration is given to tutoring in relation to academic and curriculum requirements and highlighted as the curricular dimension. The focus within the curricular dimension for tutors is on assisting students to maintain focussed on achieving academic success. A personalized dimension addresses the personal interaction and careers advice, alongside a practical dimension, which is emphasized as experiential learning (Boronat, Castaño and Ruiz, 2007). Also reference is made to distance tutoring that relies on technological advances. Lastly, the diversity

dimension allows reflection and awareness of social, economic and cultural differences of students. Each of these dimensions contributes to the tutoring process and forms the basis of tutoring in HEIs.

Peer tutoring is also a pivotal dimension that shifts and influences the role of the tutor. The term “peer tutor” is contested according to Underhill (2009, p. 4) because tutors are by definition, “skilled academic achievers which immediately sets them apart from other students and once peer tutor have been trained the gap between them and other students is widened as they acquire additional skills”. To mitigate this tension, “the tutor’s role is perceived as a peer, and a co-learner that is separate and decidedly different from the role of the lecturer” (Barnett and Blunner 2001, p. 292). Peer tutoring in HEIs can be identified as tutors in the same class and level as students tutored or peer tutors in the same class as students tutored but given a special status by the course instructor. Peer tutors can also be from same institution, but at a different levels or grades or from different institutions at different levels (Falchikov 2001, p. 9). For the purposes of this study, I focused on the literature-describing tutors in the same higher education institution, but at a different level or year. Below I discuss tutoring at HEIs.

2.2.1. Tutoring at Higher Education Institutions

The process of tutoring is considered a seminal educational intervention system of small group learning. According to Goodlad, (1998, p. 2), tutoring can be “traced to the ancient Greeks”. Tutoring refers to the employment of the tutor as a guide and support for learning. Macpherson (2016, p. 4) refers to tutoring as “an act which facilitates or provides a structure for another’s learning.” Tutoring is considered one of the most effective methods of promoting student-centered learning (Goodlad, 1998, p. 2).

Several higher HEIs incorporate tutoring in different ways to accommodate and cater for the learning needs of the students in unique ways but mutual characteristics exist (Underhill, 2009). Common characteristics of tutoring are a form of direction envisioned toward the encouragement and assistance of the student’s social, emotional, intellectual and social development. Tutoring is a teaching role that allows the university education to be more personal and made explicit through facilitation on an individual basis. It enables students to build their knowledge and attitudes to mature in their planning and the development of their academic progress. Furthermore tutoring is an action that actively prepares and integrates students into the university institutions. Tutoring channels

students' relations with the different university services to ensure sufficient and cost effective use of the different resources provided by the institution. Tutoring is ultimately aimed at creating independent students with opportunities for student agency in learning. The success of tutoring is seen in the results of student's ability to apply knowledge independently after the tutor has given the required. Tutoring requires initial tutor training to ensure tutors have a clear understanding of their role and institutional expectations. The initial training has a positive effect on tutors; it provides the tutors with foundational support and a point of references (Topping, 1988). So, continued training is necessary since students learning needs also shift continuously. For this reason, one has to establish tutors' roles either as tutors or consultants, and how to train them (Bruffee, 1993, p. 83). The training should be conducted to ensure successful implementation within the tutorial environment.

2.2.2. The tutorial environment in HEIS

Although one-on-one tutoring has been more effective than the one-to-many classroom instruction (Bloom, 1984), it is not economical to provide every student with an individual tutor (Koedinger and Corbett, 2006). Tutorials at HEIs are planned and structured to enable tutors to reemphasise concepts within groups and large class settings. In these groups, opportunities are created for students to be actively involved, and room is provided for them to voice their understanding. Tutorials are not only platforms for discussions and dialogue; they also cultivate space for practical activities that demonstrate understanding. Interactive learning is encouraged in tutorials; it enables students to clarify and extend discussions and other activities through reading, to augment what they learnt from lectures. Active student (tutee) participation ensures that meaningful learning takes place productively in tutorial times.

In HEIs, a tutoring teaching and learning strategy should identify the importance of tutorial spaces as means of facilitating student learning through collaborative interaction in a safe learning environment. Tutorials are environments where students (tutees) can reflect and apply academic practices and concepts in the respective disciplines being studied. Tutorials offer room and possibility for the learning tasks prioritised to contribute to transforming information into usable knowledge. There are several challenges that arise in tutorial environments and are discussed below.

2.2.3. Challenges relating to tutoring

Even though this study suggests that tutors play a vital role in conducting successful tutorials, there are challenges within tutoring that hinders meaningful tutoring within the tutorial environment. Tutoring within one-to-many tutorial environments does not allow for easy identification of learning needs and gives way to challenges such as discussions revolving around the tutor, delayed duties, unavailability of tutors and unethical behaviour.

2.2.3.1. *Discussions around the tutor*

In light of the traditional role of a tutor to convey the content to the students (tutees), instead, discussions in tutorials tend to be about the tutor and timetabling. This limits students from having opportunities to interact with their peers (Cheung and Hew, 2011). While the tutors should convey the content, but being a catalyst of knowledge requires more than the transfer of knowledge. There is also the need to fully engage with students (tutees) and cater to their learning to make tutoring more effective.

2.2.3.2. *Delayed duties and unavailable tutors*

Furthermore, challenges such as “delayed marking, futile assessment assistance and ineffective feedback” are common within tutoring and within teaching and learning in general (Klimova and Poulouva, 2011). Tutors often struggle to find a balance and to juggle these responsibilities in large classes. This ultimately results in poor performance (Hockley and Clandfield, 2010). Tutors further complain that they are not given enough time to perform tasks (Chai et al 2013, p. 127–130). Further challenges point to the accumulation of functions and the lack of availability (Simão et al., 2008). Tutors are often inundated with several modules that they tutor; they are often students themselves and find it difficult to juggle all responsibilities and accumulated functions resulting in their unavailability to their students. Students require prompt responses, and feedback for tasks done. Tutors unavailability frustrates students (tutees).

2.2.3.3. *Relevant tutor training*

Tutors are often limited to traditional tutoring styles that are far removed from the students learning needs. These traditional forms of tutoring are appreciated as a starting point but they are limited in light of changing technology. In as much as institutions are adapting to teaching and learning with technology, so should the tutors. These initial training elements are necessary and have positive effect on tutors since they provide tutors with foundational

support and a references point (Topping, 1988).

However, if tutors incorporate new ways of tutoring then technology in light of mobile learning would constitute a unique learning experience (Traxler, 2010). Technological advancements create “space to reconsider, re-imagine, and re-invent learning environments that prepare each individual for effective life-long learning” (Groff, 2013, pp. 35). The idea of re-imagining learning within the learning environment branches from this notion. Hlagala (2015) recommend that researchers use mobile learning to identify significant prospects in mobile educational technologies, report on the profound attributes of learning using digital technology and strive to understand the social practices enabled by mobile devices. The focus of this study is on tutors and their ability to incorporate mobile learning in the tutorials through the inclusion of the students’ mobile devices. The inclusion of mobile learning in tutorial spaces broadens as a virtual tutorial space is created. Facilitating learning on a virtual platform in and outside of tutorial venues can be challenging to tutors. A study conducted in Ghana by Amoah et al., (2018, p. 69) noted that the “majority [of] tutors needed knowledge and skills to effectively integrate hand held devices in their practices”. When integrating new technology for tutors, it is important to have proper support and training on how to use mobile device, and associated equipment and the applications (Sundvik, Masalin and Hervonen, 2016). Mobile learning is discussed below.

2.3. Mobile learning

Mobile learning literature in the last decade expanded and focused on emerging theories (Veletsianos, 2010; Wheeler, 2012; Ng’ambi, et al, 2015; Kong, et al, 2017;), and pedagogical frameworks (Wingkvist, and Ericsson, 2010; Park, 2011; Rikala, 2015; Barreh and Abas, 2015). These theories range from the current state of mobile learning (Traxler, 2009), a historical overview of mobile learning (Crompton, 2013), and student perspectives on mobile learning (Wang, et al 2009; Althunibat, 2015; Uğur, et al 2016). Several studies focus on the implementation of social networking particularly Facebook in education through mobile learning efforts (Kabilan, Ahmad and Abidin, 2010; Kaplan and Haenlein, 2010; Hew, 2011; Rodriguez, 2011; Toliver, 2011; Manan, Alias and Pandian, 2012; Lantz-Andersson, Vigmo and Bowen, 2013; Manca and Ranieri, 2013; Gikas and Grant, 2013). Incorporating mobile devices for learning (Sharples et al, 2009; Gikas, and Grant, 2013, North, Johnston and Ophoff, 2014; Louw, 2015), mobile computing devices in higher education institutions (Traxler, 2010; Keller, 2011; Kilfoil, 2011; Traxler and Wishart, 2011;

Gikas and Grant, 2013; Barreh and Abas, 2015), and technology for communities (Wenger, White, and Smith, 2009; Wang and Ma; 2017). The literature on mobile learning indicates that there is growth in the research on mobile learning along various trajectories. Below, I consider the definition of mobile learning.

2.3.1. Defining mobile learning

An in depth examination of mobile learning suggests that it is not merely about 'mobile' or about 'learning', but it is part of the "new mobile conception of society" (Traxler, 2007, p. 5). There are various definitions of mobile learning. However for this study an appropriate definition of mobile learning focuses on the wireless and digital devices used by students (Traxler, 2007). According to Vavoula and Sharples (2009, p.1) mobile learning is not just "learning that is facilitated by mobile technologies", it involves "processes of coming to know through conversations and explorations across multiple contexts". In another perspective, the emphasis is placed on the mobility of learners and the mobility of learning and the experiences of learners learning using mobile devices (El-Hussein and Cronje, 2010, p.14). The three terms derived from these definitions: mobility, mobile devices and learning are examined in this study.

2.3.1.1. Mobility

Rikala (2015) defines mobile learning while primarily focusing on the mobility aspects and opportunities of learning across different contexts, through social and content interactions mediated through mobile devices. This definition seem to assist, simplify, improve and strengthen the possibility of teaching and learning anywhere and anytime. According to Ghasemi and Hashemi (2011) and Stanton and Ophoff, (2013), it creates a unique learning environment and opportunities while being on the move. Learning can take place while one is in a bus, waiting for a taxi, and jogging since engagement with content is not limited to the structured lecture or tutorial allocated time.

2.3.1.2. Mobile Devices

Mobile learning is only possible if mobile devices are used by students to collaborate and to benefit from learning opportunities beyond the classroom. Futurelab (2004) agrees by suggesting that "mobile devices give us a unique opportunity to have learners embedded in a realistic context at the same time as having access to supporting tools". Broad ranges of technologies are considered in providing the mobile capacity for example mobile phones, PDAs, and cameras. Early definitions overlooked the significance of the personal,

portable and ubiquitous nature of the devices (Woodcock, Middleton and Nortcliffe, 2012, p.3).

2.3.1.3. Learning

According to Sharples (2009, p. 5), mobile learning is understood to be the process of coming to know whether personal and public through the “exploration and conversation across multiple contexts among people and interactive technologies”. Learning boundaries have been extended as learning through the inclusion of mobile devices. For Dikkers (2012) the learning experience you design is in the world, but also extends beyond your reach to form a new learning landscape. The ability of being at one place but reaching insights from across world simultaneously has influenced the dynamics of learning tremendously. Kukulska-Hulme (2010) concurs that mobile learning creates new learning backdrop that is moulded by the availability and convenience of technologies that is permeable, available and learner-focused education.

Categorising the different definitions of mobile learning allows for a clearer understanding and makes it easier to consider one’s position relative to mobile learning. In this study, if mobile learning is learning that uses mobile devices with wireless connectivity such as mobile phones, smartphones, tablets or any other mobile devices that offers students the opportunity to enhance their learning experience anywhere and at any time; then mobile learning can be incorporated in tutorials. The boundaries within tutorial spaces shift as inclusion of mobile devices adds new possibilities to tutoring. The additional functionality such as Facebook discussion forums can deliver an educational experience that would otherwise be difficult or impossible to realise. Through the inclusion of discussion forums through means of mobile, tutors can deliver information in time and in context. Mobile devices enhance rather than limit mobile learning, which is the discussion that follows below.

2.3.2. Mobile learning in South African HEIs

Universities in South Africa have, for the past decade, recognised the role of educational technologies as tools to facilitate teaching and learning (Bozalek et al. 2013). There are specific ways in which South African higher education institutions (HEIs) has engaged with technology in teaching and learning. Bring your own device (BYOD) rrefers to the practice of students bringing their own laptops, tablets, smart phones or other mobile devices with them to class. The BYOD approach has been widely accepted and is being used to

enhance student motivation and mobile learning in tertiary institutions in countries such as South Africa (Akin-Adetoro & Kabanda 2015; Sweeney 2012).

The University of Johannesburg (UJ) became the first South African institution to fully embrace the use of mobile devices for teaching and learning. UJ introduced the use of mobile devices such as laptops and other handheld devices, such as tablets and smart phones within their lecture venues (Louw, 2015). At the newly established Sol Plaatje University in the Northern Cape offered its first intake of Computer and Information Science/Engineering, Business, Economics and Management Sciences and Education students sponsored with laptops, where one-on-one access can be assumed (Brown and Pallitt, 2015). Rhodes University makes use of virtual classrooms, podcasts, videos, online reading groups, social media and Skype with in lectures to incorporate technology through mobile devices (Rhodes University, 2016). The University of Witwatersrand (Wits) makes use of a number of resources for mobile learning and personal development available online so they can be accessed anytime and anywhere that there is a connection to the Internet. Wits has implemented MOOC's as a free online courses from Wits University, Wits-e which is a Wits' institutional Virtual Learning Environment; VTC as online training in a wide variety of software titles as well as Microsoft Imagine Academy which is an online certification for Microsoft software programmes (Wits, 2018).

2.3.3. The Growth of Mobile Devices

The Independent Communications Authority of South Africa (ICASA) revealed the trends in smartphone subscriptions and the steady growth in mobile device purchases.

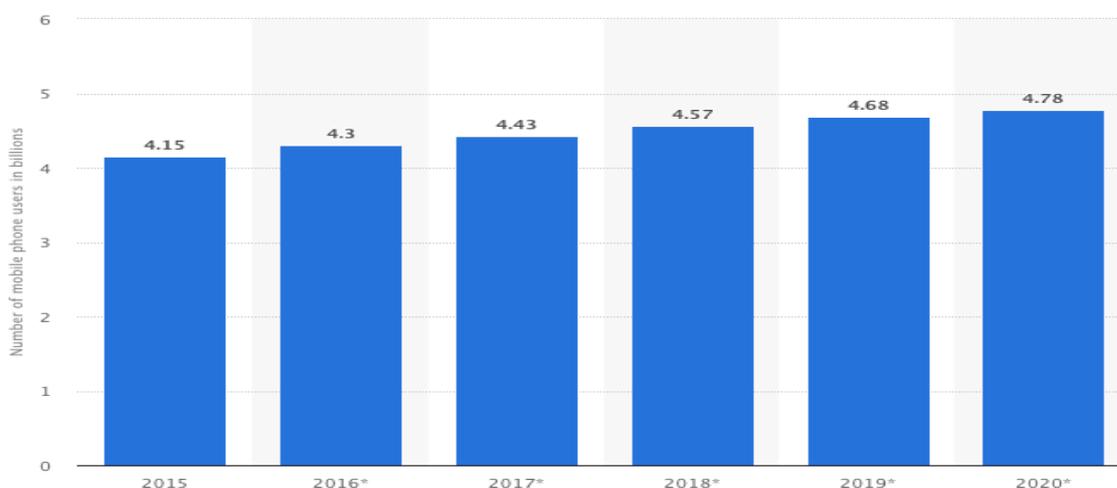


Figure 2.1: Number of mobile phone users (ICASA Report, 2018)

Figure 2.1 shows that there are over 4 billion smart phone users in South Africa. The high usage of smartphones indicates that these devices are powerful tools that people — including the students in institutions — have at their disposal to use for education purposes. Successful and effective learning in the teaching and learning spaces are achievable through smartphones. According to Traxler (2007, p. 4 - 5) “mobile devices change the nature of learning as learning that used to be delivered 'just-in-case,' can now be delivered 'just-in-time,' 'just enough,' and 'just-for-me.' Finding information rather than possessing it or knowing it becomes the defining characteristic of learning generally and of mobile learning especially, and this may take learning back into the community”. These smartphones have relevant features and capabilities of playing and storing music, writing and reading emails and blogs, capturing and sharing digital pictures through social media and websites and accessing maps amongst other services (Safko, 2012, p. 448).

All the above features, in learning spaces, enhance successful teaching and learning experiences. Portability is a mobile device benefit; it can be taken to different locations for this reason it can be of educational value beyond lecture or tutorial allocated times. This benefits students' since they access learning anywhere at any time (Traxler, 2010). Furthermore, mobile devices contribute to social interactivity through networking and collaboration with others (Churchill and Churchill, 2008), and to provide scaffolding to the students' approaches to investigation and learning needs (Eady and Lockyer, 2013).

2.3.4. Learning in the 21st Century

The mobile revolution in the 21st century demands an expansion of our view of learning as digital literacy releases unimagined possibilities. Students of the 21st Century are no longer the students' the educational system was designed to teach (Prensky, 2009). The chalk board and talk methods that was the norm, is no longer the only means of teaching. Furthermore, there is also a change in learning in the 21st Century. Students' mental processing differs from their ancestors; they “[have developed] new learning styles and intellectual capacities because of the inclusion of technology” (Prensky, 2009, p. 9). The inclusion of technology places students' in a world of wireless and wired choices that makes learning go beyond the traditional scope possible; it also brings foreign challenges such as FOMO along with it. Below, I discuss why learning is different in the 21st Century.

2.3.4.1. *Very wired and more and more wireless*

Generation Z (Born 1995 - 2010) and Millennial' (Born 1980 - 1990) students' learning preferences is influenced greatly by the innate connectivity wired networks (immense high speed, high-security, plug and play) or wireless networks (less or no cables, freedom of working from anywhere) networks. These students are digital natives and have an 'always on' communications attitude that allows their lives and learning to be influenced by an 'I Want What I Want When I Want It' perspective (De Beers Group report, 2018, p1). A survey by Pearson Report (2018) points out that "39% of Generation Z prefer learning with an educator leading the instruction; YouTube is also their number one preferred learning method". Three hours or more is spent daily on the video platform. Millennials on the other hand need more flexibility. The Pearson Report (2018) says that Millennials "are more likely to prefer self-directed learning supported by online courses with video lectures". Even though Millennial students, also known as the "plugged in" generation", they still prefer a textbooks.

Regardless of their differences, both Generation Z and Millennials see a positive future of technology in education (Pearson Report, 2018). There are commonalities amongst these generations of students. Thus apart from the fact that they jointly fill up the lecture venues, for them, learning means more when they are able to practically apply what they learning. For these students', content must be explicit, summarised and straight to the point. They have an appetite and curiosity for information and will search for it, even if educators do not teach it. Given the constant availability of information, these students' do not see the need to learn everything immediately. They prefer that educators present to them where to find the information that they need. These students are positive about technology and the future: 59% of Generation Z and 66% of Millennials believe technology can transform the way HEI students learn in the future (Pearson Report, 2018).

2.3.4.2. *Learning beyond the traditional boundaries*

The traditional classroom and face-to-face learning are no longer the only forms of learning environment. "Older philosophies assume that learning takes place [only] in a classroom facilitated by a teacher" (Sharples, Taylor and Vavoula, 2007, pp. 221). This traditional classroom is faced by pressure from evolving technologies. Indeed, an ever-evolving digitally conscious student threatens the existence of this class and this approach to learning.

Mobile learning opens makes possible a radically new paradigm of learning; it encourages the abandonment of the constraints of our habitual ways of thinking, learning, communicating, designing and reacting (El-Hussein and Cronje, 2010). The limitations of where learning should take place, at what restricted time, through a scripted curriculum guided by a specific textbook only, has changed. Resources are limitless and extend across the globe in a number of seconds. Mobile devices are shifting the goal posts of traditional boundaries of learning. Mobile learning is turning learning, as we know it, upside down. Mobile learning has great influence on the learning context.

2.3.5. The context of mobile learning

The setup of a permanent and well-known educator with a scripted curriculum has been turned upside down because of technology. It has “[removed] the solid ground [upon which] education as the transmission or construction of knowledge [was constrained] by a curriculum” (Sharples et al., 2007, p 22). The shift in what we perceived as stable and common ground due to the technology creates implication for what seemed like a stable context. Furthermore how meaning is made changes. This new context plays a significant role in mobile learning. According to Wingkvist and Ericsson (2010), the context is not fixed, however, it changes with important implications for all learning experiences. Mobile learning approaches take into account both formal and informal learning experiences whether these occur in or out of the traditional classroom. While a traditional classroom holds that it a stable context for learning, mobile learning breaks these barriers since it extends beyond fixed traditional boundaries. Therefore, mobile learning has the potential to support explorations and conversations to create a cylindrical structure of how meanings are made (Sharples, Sánchez, Mildrad, and Vavoula, 2009). The making of meaning through exploration refers to movement of learning through a conceptual space or a physical space. It makes the content and dialogue mobile; it links practices and ideas into new knowledge. Dialogue and discussions are able to connect learning across contexts. The making of meaning making through conversation occurs between people in different locations and at different times, this can also refer to reading the notes you made in a different location at a different time (Dewey, 1916; Pask, 1976).

The availability of devices in teaching and learning influences the context as a “radical transformed societal notion of discourse and knowledge is created” (Traxler, 2007, p. 2). Mobile devices influence the education context since it gives support to social networks that cultivate a different language and new ways of finding and sharing knowledge. The

power of mobile devices in learning lies in the fact that learning has the ability of occurring “inside and continues outside the lecture venues” (Crompton, 2013). Fundamentals such as “time, environment, social activity, learning outcomes activities, tasks of groups and individuals” are all shaped by merely including mobile devices in the learning process that in turn and influences elements of the context of hierarchy (Sharples, 2010).

2.3.5.1. *The context hierarchy*

Whereas certain elements of context are considered fixed to some extent, some features of learning experiences change more frequently, while others may occur over longer planned periods within an institution. The students’ and tutors’ function across these contexts.

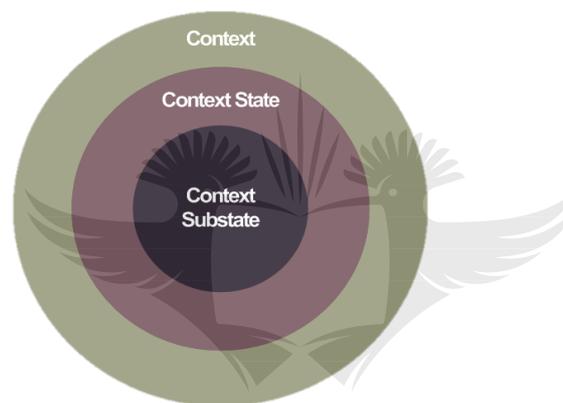


Figure 2.3: Context Hierarchy (Lonsdale, Baber, Sharples, and Arvantis, 2004)

In *Figure 2.3*, the outer circle shows the wider context that is about interaction among people and interaction between settings, technologies and artefacts over time (Lonsdale et al., 2004). In the tutoring context, the outer circle concerns the interactions between the students’ and tutors’, the tutorial environment and the mobile devices and mediated artefacts such as the Facebook application and tutorial activities. The middle circle termed the *context state* focuses on the elements of learning and context that is specific in time, space or goal order. This circle concerns the interactions between a department or faculty, or even the wider university (Glahn, Börner, and Specht, 2010). The inner circle is the *context substate*. It concerns attributes from students’ and the context based on the existing focus of learning and desired level of context awareness (Lonsdale et al., 2004). This circle concerns learning in tutorials and students’ experiences in tutorial.

Mobile learning supports a sense of agency, personalised, independent learning and an interactive, social and collaborative method of learning that permits learning within and

across contexts (Glahn et al., 2010). Mobile devices play an important role in the context changes. The changes in the context give way to implications and challenges that are further discussed below.

2.4. Challenges of implementing mobile learning in tutorials in HEIs

There are several challenges that occur in tutorials in the context of mobile learning within South African HEIs. These include the digital divide, the lack of digital consciousness and mobile devices that are not used for academic purposes are discussed below. Similarities of several challenges can be identified within HEIs abroad and South Africa.

2.4.1. Digital Divide relationship between lecturers and students

One of the challenges is the digital divide within the relationship between lecturers and students. According to Underhood (2007), efficient tutoring is hindered by the digital divide that exists between the student and lecturer in the HEI context. Mor (2007) argues that part of this problem results from the fact that educators and students do not completely recognise the ways technology and learning can coincide. Students' learning methods is perceived to be persuaded by previous formal learning experiences rather than their use of technology beyond the classroom (Littlejohn, Margaryan and Vojt, 2010). The constant evolution of technology widens the gap between how learning was and how teaching should be. The current cohort of students' reason and perceive information differently from previous students and educators (Prensky, 2009). There has to be an emersion of digital worlds of those who have gone before and are teaching traditional methods in a digital context, vis-à-vis those who speak and learn in the digital language and have digital expectations.

Prensky (2009) describes the lecturer as the 'digital immigrant' who live in the 'digital world'. This describes the students as digital natives who are completely comfortable in this new world. This study examines the dilemma of the digital divide between the digital immigrants speaking an obsolete language from the pre-digital age. This completely new digital dialect makes it difficult to teach and learn. There is therefore a need for innovative learning and relevant approaches for learning in order to manage the challenge of digital divide. Prensky (2009, p. 9) asks: "should the digital natives learn the old ways, or should their digital immigrant learn the new?" He answers, "it is highly unlikely that the digital natives will go backward". Tutors are digital natives who are able to transfer their content knowledge and experiences to their peers in a current and relatable manner. This study

suggests that tutors are the link between the students and the lecturer; they bridge the lecturers, students with technological advancements.

This study is focused on tutors who have the potential to communicate and influence students at a deeper level, among other reasons because they consider tutor as their peer. The tutorial is an effective setting for tutors to bridge the digital gap because the tutor has control and can create an atmosphere of learning in an open relatable way. Incorporating technology through mobile learning from a tutor perspective connects students with the content, with each other, with their tutors and with the lecturer in the 21st Century where students need to merge and to be stimulated in their learning environment.

2.4.2. Socioeconomic and location-based digital divides

Another digital divide aspect that is broad challenge in several South African institutions is the socioeconomic and location-based digital divides in South Africa. The government needs to continue to pursue and create initiatives to optimises ICT access (UNICEF 2012). The complex relationships between students' access to ICTs, their home languages and their socioeconomic backgrounds are also relevant in the higher education sector (Brown & Czerniewicz, 2010). This challenge has been acknowledges by Universities across South Africa. Through the purchasing consortium (PURCO) for South African HEIs, some universities have negotiated a cost-effective purchasing scheme for students to acquire laptops and tablets such as the UJ and Sol Plaatjes (Louw, 2015; Brown & Czerniewicz 2010). Despite this, the outlay for poor students, in particular, represents a significant cost; thus the educational value of these devices needs to be clearly demonstrated before funding can be prioritised and universities/government can be reasonably be expected to provide (or students acquire) them (Brown & Czerniewicz, 2010). In acknowledgment of this need, a number of South African HEIs have to develop strategies to facilitate and investigate the use of mobile devices in the lecture venues.

2.4.3. Mobile devices not used for academic use

Another change comes from how mobile devices are used. Indeed, very little effort is made by students to use their devices for academic purposes. Focused on South African teaching and learning context, Hlagala (2015) found that notwithstanding the positive benefits of learning on the go, some students have not embraced the changes mobile devices have made possible for learning. Indeed, some students enjoy using these tools for learning. Furthermore, within the South African Pearson Institute, some *student*

attitudes toward digital course materials revealed that 44 percent of students would still rather have all of their learning materials accessible on hard copies. The students lack the understanding of using digital technologies more to build their personal learning experiences; this is a challenge. This creates a reluctance to embrace mobile learning and becomes a contributing factor for students not to use their devices for academic purposes (Pearson, 2016).

Students have attributed negative qualities to instructional technology due to ineffective implementation in lecture rooms and learning activities (Armstrong, 2011). Studies of mobile learning reveal the technical limitations of mobile devices such as the small screens with a low-resolution display, inadequate memory, slow network speeds, and lack of standardisation and comparability (Wang et al., 2009; Lowenthal, 2010; Park, 2011; Haag, 2011). Other studies have shown users' psychological limitations (Wang et al., 2009; Park, 2011). For example, students are more likely to use mobile devices for texting friends, listening to music and checking social media, rather than for instructional purposes (Wang et al., 2009; Park, 2011).

Whereas studies have been done that address factors that determine the acceptance of mobile technology by lecturers (MacCallum et al., 2014; Alfarani, 2015), those that factors that influence the intentions students of HEI in using mobile learning (Althunibat, 2015; Uğur, Koc, and Koç, 2016), very little research has been conducted on the factors that influence the use of mobile learning by tutors to enhance the learning experience and how to meet student expectations and needs.

The adoption of the Bring Your Own Technology (BYOT) initiative allows students to learn with whichever mobile device that best suits their needs or devices that they have at their disposal without incurring additional costs to the educational establishment (Traxler, 2011). Institutions can adopt instructional designs that are suited to the integration of technology in which students are able to participate through their devices. Students of the 21st Century can have more than one device if needed, but the number of devices held by students are quite variable (Laru, Näykki and Järvelä, 2013). Device-to-user ratios range from the use of multiple computing devices (like sensors) by one student (10:1) to a class of students with one interactive whiteboard (1:n) (Dillenbourg, 2010). Ratios such as "1:2 (as in pair work sharing a device), and 1:4 (as in small-group work discussions mediated by a shared device) set new challenges for instructional designers because each ratio provides different dynamics of interaction and collaboration" (Wong and Looi, 2011, p 20). In other

words, different device-student ratios are an example of converged cognitive tools that we unconsciously and effortlessly use for achieving the benefits of distributed intelligence (Pea and Maldonado, 2006).

2.5. Benefits from mobile learning in tutorials

By incorporating technological tools in tutorial sessions, tutors ensure the productive use of time, meaningful learning takes place and content wise, break down difficult concepts to make the subject content understandable. Below, I discuss the benefits of mobile learning.

2.5.1. Tutor experiences

According to Bober (2015, p. 6), “tutors often commented on the transformative effect the technology had on their tutoring in the way that it managed to engage the students”. The focus was not on using smartphones, but the transformative potential came from the services and functions that could be accessed by the students for the learning activity. The educational benefits of mobile devices had clearly been established for many tutors. “Mobile learning allows these students to exploit moments of time and space for learning to work with other students on projects or discussions, and to maximize contact and support from tutors” (Traxler, 2007, p. 18).

2.5.2. Student experiences

Studies reveal that students choose Facebook for activities such as sharing multimedia, textual social debates and discussions (Pennington, 2009). Students are aware of the degree of appropriateness when using devices in the classroom (Berry and Westfall, 2015). Several students reveal that they are aware of poor performance that may result from texting during a lecture (Froese et al., 2012; Gingerich and Lineweaver, 2014). On the other hand, students are aware of the negative impact but still show optimism and interest in using devices in class for academic instead of personal purposes (Berry and Westfall, 2015). Below, I discuss Facebook as an example of mobile learning.

2.6. Facebook as a tool for learning

Mobile learning allows students flexible (irrespective of time and location) access to social networks such as Facebook. Several students in our society devote an enormous amount of their time outside school hours on social networking websites (Tan, Ng and Saw, 2010). Therefore, using Facebook as a function of mobile learning initiative to supplement

tutorials is aligned with the current trend. Facebook allows for online discussions and gives rise to the mobile approach, which is a quality of mobile learning. Additionally, combining online learning activities with traditional face-to-face teaching in some measure solves the problem of inadequate class time. Since learning can continue beyond the classroom, it makes learning to be more interesting (Manan, Alias and Pandian, 2012).

2.6.1. Largest social networking site

Social networking site, Facebook has become the largest and most popular networking site due to almost a billion members who are connected and share interests groups (Lantz-Andersson, Vigmo and Bowen, 2013). In South African, statistics for popular social networking sites such Twitter, LinkedIn, Instagram and Facebook depicted in *Table 2.3* reveal that Facebook ranked the highest with 16 million users by the end of 2017. Social networking, a term coined in 2005, is defined as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content” (Kaplan and Haenlein, 2010). The networking aspect of the term implies that social interactions are mediated through social networks, digital networks, and digital devices. According to Greenhow (2011), “social networking broadly includes social networking sites, such as Facebook, Twitter, Instagram, MySpace, Skype, and LinkedIn”. Social networking also includes media sharing sites, such as YouTube.

According to a survey conducted by Business tech (2017) the 2017 local figures for the largest social media platforms in the country, as part of the latest South African Social Media Landscape Report for 2018, Facebook remains the most popular platform in the country. With almost 30% of the population now connected to Facebook. With 16 million users on Facebook in South Africa, 14 million access the site from their mobile devices (Business tech, 2017).

Table 2.2: Social Media Statistics in South Africa (Business Tech, 2017)

Platform	2016	2017
Facebook	15.5 million	16.0 million
Twitter	7.7 million	8.0 million
LinkedIn	5.5 million	6.1 million
Instagram	3.5 million	3.8 million

Johannesburg with five million users on Facebook has the most activity. This has great potential for educational use. User-driven initiatives on Facebook as social networking tool create the opportunity to understand the pedagogical use of social media for educational purposes (Ng'ambi et al., 2015). Several South African researchers promoting mobile learning are researching how Facebook is being used for educational practices such as microbiology and engineering (Ivala and Gachago, 2012) (Ng'ambi et al., 2015) and education (Robertson and Dasoo, 2018).

Qualitative and quantitative features from engagement on Facebook can be identified. Using a wide variety of activities is a qualitative feature and the time spent on Facebook is a quantitative feature. An online educational discussion is directly related to the quality and quantity of student engagement. Facebook's use is related to real-world student engagement but to consider the usefulness and value of any educational practice the influence of that practice to cultivate student engagement is important (Junco, 2012). Therefore, if Facebook increases engagement; it is possible for it to be used educationally relevant ways for learning.

2.6.2. Learning opportunities in online spaces

Facebook was created as a social networking website and later expanded to different educational settings beyond the country of its origin (Hew, 2011). Learning through networks such as Facebook changes the nature of learning since it exceeds the notion of an individualistic activity. This gives way to what Siemens (2005) termed connections and connectiveness through networks that emphasise learning and knowledge from diverse backgrounds. In this space, learning is a method of linking knowledge sources since it argued that learning can extend from non-human things. The capacity to know more is has never been fully understood. This notion allows students to consider connections between fields, ideas and concepts. It allows them to nurture and maintain connections.

2.6.2.1. Facebook discussion forum in tutorials

Facebook was used as a mobile learning initiative in this study and was incorporated in tutorials as a discussion forum for students to post messages and to reply to them asynchronously. The discussion topics were posted on the forum by the tutors; students were required to post their responses as part of a tutorial task. The tutors introduced critical discussions in order to engage with the students through online posts and

comments that analysed the content and responses from students. Tutors were also guided the students with clues and appropriate answers. Studies have shown that forum discussion on Facebook, have the potential to improve learning (Tina, Mansor and Norziati, 2011; Barreh and Abas, 2015; Espinosa, 2015)

Facebook discussion forum has several benefits, for example, students saves time and this allows for deeper consideration and reflection on content and formulating meaningful answers. Researchers have established that students who felt they did not have enough background knowledge in the subject matter did extra research before commenting on the forum (Du, Zhang, Olinzock and Adams, 2008). They did so, so as not to sound unintelligent online or face-to-face. Another benefit from Facebook forum discussions is that it gives all students an opportunity to voice opinions. Furthermore, according to Hrastinski (2008), social ties are formed during these discussions and these ties have a pivotal role to play in collaboration. Collaborative learning within the online discussion forum is nurtured when students learn from each in the communities of practice (CoP). This digital space ensures that students are on track. In this study, a Facebook page was created; students registered for the Teaching of Studies 2 B module (TST20B2). On this forum, they could exchange their opinions regarding a specific topic guided by the content and the tutors. In this study, Facebook was used for conversation through text, expression through pictures and meme's, online quiz questions, content related exercises and YouTube videos to supplement face-to-face sessions. The senior tutor managed and monitored the Facebook page to monitor possible abuse such as offensive posts, personalized message chats and cyber bullying. TEDtalk videos on Youtube were posted on the Facebook page to reinforce the theoretical concepts learned. In addition, in order to engage students to take part actively in tutorial activities, the results were discussed and feedback was given timeously. In sum, the activities conducted on the Facebook platform offered students the chance to consider and apply content differently and in a way that is relevant to them.

2.7. Challenges of implementing Facebook in tutorials

Below, I discuss several challenges that may arise when Facebook is used educationally. These challenges may include ethical considerations, entertainment vis-à-vis engagement, questionable educational values and access when off campus.

2.7.1. Cyber bullying

A common challenge in the virtual space is cyber bullying. According to Hassan and Dickson (2014), one of the disadvantages of Facebook is it is an open space, it is public and it is a disturbing private space. The inclusion of Facebook as discussion forum brings to the fore ethical considerations since it must involve protecting students from abuse within the space. There are dangers and challenges that need to be deliberated. For example, research revealed that social networking involves risks that include privacy being violated, intimidation through bullying and harmful interactions (Livingston and Brake, 2010). Studies also reveal that these dangers not only affect students, but the tutors, where they have been subject to virtual forms of ostracism (Minor, Smith, and Brashen, 2013). It is evident that mobile learning in the virtual spaces carry some risks. These risks open tutors as well as student to vulnerabilities.

In general, Hartung (2011) emphasizes the importance of creating a workplace policy that addresses cyber bullying. Laws have been enacted to place certain legal restrictions on online discussions and these laws are generally in harmony with the ethical standards. However, such laws transcend codes of ethics; they provide legal processes to be observed in confronting violators. Hartung (2011) also points to educating and enforcing investigation of all incidents and complaints. The Washington State Department of Labour and Industries (2011) emphasised a zero-tolerance code of conduct to deal with bullying in order to stop grievances, negative atmosphere, discouraged morale and the absence of productivity. Minor, Smith and Brashen (2013) concur that a zero-tolerance policy that is thorough discussed with the faculty and students will mitigate the problem of abuse. Huffman (2013) observes that when stakeholders (students, tutors and educators) are unaware of the risks involved, they put themselves at risk by sharing information. Retracting information that is released into cyberspace is impossible. So it is the duty of the institution such as UJ, to provide intervention and support that guarantees a safe and productive learning environment. Cyber bullying should be emphasised as a code-of-conduct violation and should be highlighted in learning guides and online learning management systems. It should be made abundantly clear there are consequences for students that infringe the code of conduct.

2.7.2. Entertainment vis-à-vis engagement

A further dilemma is the blurred lines between entertainment and intellectual engagement. Multimedia effortlessly fascinates students, but this visual engagement does not necessarily signify and guarantee intellectual engagement. In fact, according to the American Psychological Association (2009) excessive multimedia stimulation can affect the deeper cognitive processing that is crucial for learning. Educators must strategise plans to introduce activities on Facebook that would allow students to have meaningful learning experiences.

2.7.3. Questionable educational value

Several researchers are negative about the use of Facebook in the learning space because of the lack of control and the inability to maintain student's attention. If a student is not paying attention, he or she is not learning. Kirschner and Karpinski (2010) concur that educators do want to use technology to expand and strengthen student-learning abilities but there is a difficulty in maintaining students attention. Hew (2011) argues that this is to the educational value of Facebook that is insufficient since students mainly use Facebook for social interactions. This incapability to completely comprehend the educational values of Facebook motivated Manca and Ranieri (2013) to examine Facebook as a learning environment. The study showed that the pedagogical affordances of Facebook have not been exploited enough. According to Manca and Ranieri (2013) there are concerns with the learning environment, teacher and student pedagogies and cultural issues that might hamper the comprehensive acceptance of Facebook as a learning environment for students.

2.7.4. Off campus access

Another challenge is the inability to access mobile learning off campus. Although HEIs have made provisions for internet and Wi-Fi access on campus. Several students are unable to connect their devices from home; they don't have funds to purchase data at home. Mabuan and Ebron (2017) point out that students go to a computer shops to participate in online tasks. This requires them to spend extra money and time to access mobile learning. Furthermore, students go to Hotspots where there is a WI-FI connection in order to access mobile learning.

2.8. Benefits of using Facebook in tutorials

There are many benefits that are associated with using Facebook for mobile learning. Facebook gives students the opportunity to share, collaborate, build learning communities and knowledge and experiences through allowing members of these communities to engage with one another online (Kabilan et al., 2010).

2.8.1. Share resources and information

Common advantages of Facebook are that it allows people to share information, knowledge and resources. Facebook as a discussion forum has several benefits when students share information, ideas, knowledge and resources. Espinosa observes that:

Sharing knowledge and information online allows students to “connect the classroom with speakers around the world, bring quiet students out of their shell by asking them to participate in Facebook discussions, create study groups to easily connect with each other within their own Facebook groups, track down old students or professionals that could come to the classroom as guest speakers, connect with classes all around the world, and discuss classroom ideas with other teachers on Facebook. All these ideas can contribute to improve students (Espinosa, 2015, p.2206-2210).

Facebook groups facilitate easy, convenient and quick information dissemination among students. By accessing the group anywhere via Internet-ready electronic devices, students can get notifications and updates on the tutorial activity without the need to meet physically with the teacher (Mabuan and Ebron, 2017).

2.8.2. Building virtual learning communities

Facebook has the potential for more student engagement as a learning environment. However, the use of social media should be supported by academics in order to build a community and to increase student engagement at HEIs (Toliver, 2011). Mazman and Usluel (2010) concur that Facebook as an educational tool, provides active participation and collaboration. Daraei argue that:

Facebook as an educational tool “develops team-working skills; is helpful for both educators and students when used as supportive material in lessons; helps educators and students to know each other better via the profile pages; made learning more enjoyable; increase students’ motivation by allowing them to communicate more effectively (Daraei 2015, p. 77).

Facebook allowed them to learn from the older students whom they usually don’t meet in person. This allows them to network with groups who have similar academic interests, even though they may be in different classes. The key benefit is the instant accessibility to

the tutors and lecturers, informally and on a less pressured online environment. The learning communities in the virtual space create space for shy students' voices to be heard. These students felt empowered enough to raise their opinion on Facebook, something they would be reluctant to do in class (Bosch, 2009).

2.8.3. FOMO

Another benefit of Facebook is that it makes mobile learning to be personal and more interactive. A disadvantage that birth from this advantage of Facebook and social networking websites is a fear of missing out (FOMO) and is a reality among students. It refers to a concern that one might be missing out on rewarding experiences (Przybylski, Murayama, DeHaan, and Gladwell, 2013). FOMO is defined as feelings of anxiety online users suffer when an exciting or interesting event may be happening elsewhere, at that moment, and they are not there" (Oxford English Dictionary, 2013). By creating learning platforms for mobile devices, on Facebook, tutors and lecturers can leverage FOMO principles to encourage active and dynamic participation. Tutors can respond quicker to students on mobile learning platforms since students thrive on what is happening in the now content, since students will respond to messages on their devices during lecture and tutorial wherever they are. They will respond to a quick message, send an urgent message or just check if they have received a notification, perhaps out of habit. Online communities and social media evidently provide for mobile learning through sharing and exchanging experiences among students to enhance the learning process in ways that could not be imagined in traditional classrooms.

2.9. Conclusion

In this chapter I have reviewed the literature on mobile devices, mobile learning, students' and tutors' experiences and perceptions of mobile technologies in learning. I have pointed out that there are both challenges and benefits that are a direct result of using technology that has made mobile learning a present reality. Indeed, mobile learning is slowly, but surely changing traditional approaches to teaching and learning. If we accept that technology is here to stay and that it will influence teaching and learning going to the future, then we can infer that teaching and learning will never remain the same due to the influence of technology on mobile learning. In the next chapter, I discuss the theoretical framework underpinning this study.

Chapter 3. Theoretical Framework

3.1. Introduction

In this chapter, I will discuss activity theory (AT) (Leont'ev, 1978) and the Communities of Practice theory (CoP) (Wenger, 1998) as a theoretical framework for this study. Activity theory and Communities of Practice theory are useful vehicles for developing mobile learning and exploring the potential for mobile learning in tutorials facilitated by tutors. AT and CoP are used to explain tutoring developments for mobile learning and are also used to examine the design of context-aware functions that are important for mobile learning. These theories are also used for the structure analysis but do not dictate the outcome. In addition, AT supports the fast conceptual changes of contemporary society (Batista et al., 2011) that strengthens the CoP.

3.2. Activity Theory as a Theoretical Framework

The AT is grounded in Vygotsky's mediation perspectives as depicted in *Figure 3.2*. The Vygotskian common reformulations model presents the connection between subject, object and mediating artefacts. The mediating artefact, object, and subject form the triad of cultural mediation of actions.

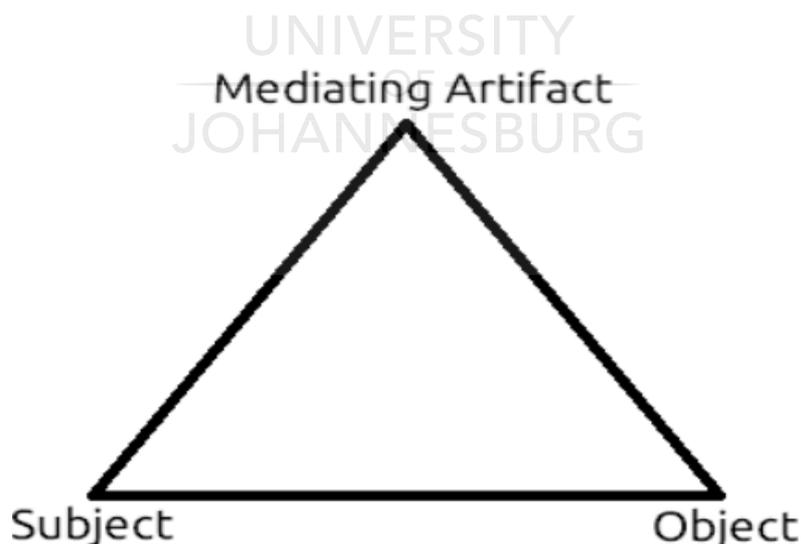


Figure 3.1: Vygotsky's Common reformulation (Vygotsky, 1978)

Activities are in motion when a subject (individual or a group) operates tools (mediating artefacts) to attain an object (objective) with the outcome as a result. An individual or group engaged in an activity is represented by a subject. An object symbolises "the

objective held by the subject, and transforming the object into an outcome is considered the motivation for the action” indicating a definite direction (Kuutti, 1996). An object could be less tangible (a plan) or totally intangible (a common idea) as long as the active participants can share it (Kuutti, 1996). Mediating tools could be represented as physical tools or psychological tools. The AT places emphasis on the educator who has a responsibility to deliver the curriculum. This highlighted the object-oriented nature of education. (Wegerif, 2007).

Engeström (1987) represent the second generation collective activity. He further contributed to the activity model social features linked to Vygotsky’s model namely “rules, community, and division of labour” (*Figure 3.2*). “Within the third generation of AT, a change concerning the development of conceptual tools to understand the dialogue, multiple perspectives, and networks of interacting activity systems are evident” (Go and van Weert, 2004).

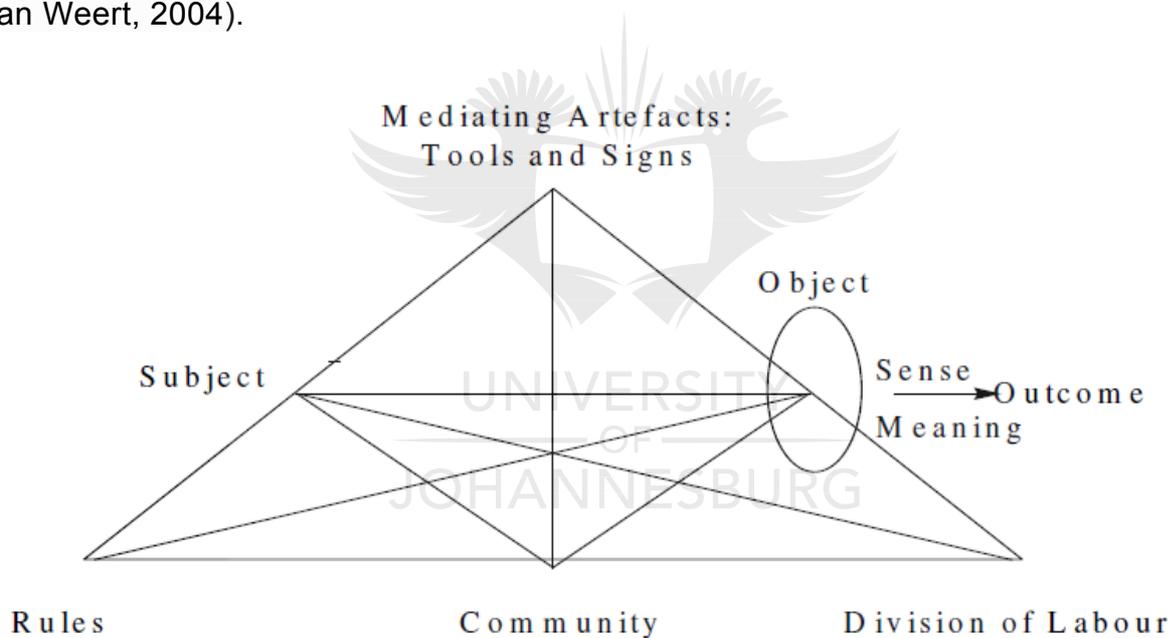


Figure 3.2: Classifying context of activity using activity theory (Engeström 1987, p.87)

Leont’ev (1978) extended Vygotsky’s theory to improve the separation between individual action from collective action. Leont’ev adds on to the description of an activity and implied that it is composed of subject, object, and tools, but adds a distinction between activity, actions, and operations (Nardi, 1996). This distinction is discussed as three levels of activity (*Figure 3.3*).

Level one consists of activity and motive known as the basic unit of analysis. At this level the minimal meaningful context for individual actions is considered (Leont’ev, 1978). Level

two considers actions and goals. The actions are goal oriented and are required to fulfill the object (objective) of the activity. Level three accounts for operations and conditions as an aspect of actions focused on how the actions are actually realised. When the goal of an action can no longer be discerned by the subject because it has become an unconscious routine through practice, then it becomes an operation (Leont'ev, 1978). This implies that when the action has been applied enough, the planning phase ends and the action moves to the level of operation.



Figure 3.3: Leont'ev's Three Levels of Activity (Leont'ev, 1978)

These components of Leont'ev's activity theory include an overall activity motivated by an object, an action directed towards a goal, and operation that depends on the conditions. It should be noted that all of these three levels can move up or down (Leont'ev, 1978).

In the first level, action describes the tutorial environment that consists of the subject (students) and mediating tools (devices/ Facebook). In the second level, action and goal are goal oriented and are required to fulfill the object (objective) of the activity. Here the actual tutorial and mobile learning activities were introduced. The third level operation and conditions of actions that referred to the way in which the tutorials were actually conducted. When the implementation of the tutorial activities became unconscious routines through practice, then it became an operation (Leont'ev, 1978) and the action moved to the level of operation.

3.3. Communities of Practice as a Theoretical Framework

The notion of communities of practice (CoP) was introduced by Lave and Wenger who focussed on adult learning theories (1991). Learning in a CoP takes place “in a certain context where students interact with and learn from peers rather than in a traditional classroom where there is a clear student-lecturer divide” (Wang and Ma, 2017, p. 19). Participation is an important aspect in a community but the generation of newer or deeper levels of knowledge through the sum of the group activity is even more crucial (Wenger, 2000). The same interests and similarities are what attract the students. The dialogue and collaborative group learning create opportunities for students to work together to solve problems. This strengthens the formed communities of practice. I use CoP in this study especially in evaluating tutorial environment using mobile learning.

3.3.1. Virtual Professional Communities

The concept of virtual professional communities of practice (VPCoP) is rooted in the idea of CoP, based on information systems and focuses on a professional field. It implies that group interaction through an electronic network is similar to CoP. Instead of the face-to-face interaction, there is the virtual space. Therefore, VPCoP are virtual places collaborating using tools (Internet platforms) used by their members to share and create professional knowledge (Dudezert et al., 2006). The community is an environment where the members share knowledge and collaborate via information systems without geographical frontiers.

However, if CoPs are small, tight-knit groups consisting of intensive and sustained interactions around a shared practice (Wenger, 1998), then VPCoPs should “follow the same pattern, particularly with respect to tie-strength and group size” (Murillo, 2014, p. 2). Internet-based communities can easily number to hundreds of members (Porter, 2004; Koh et al., 2007). The ties between participants in such large and mostly anonymous collectives can hardly equal the strong relationships that characterize CoP.

Ardichvili et al., (2003) provide a case study of ‘communities of knowledge-sharing’ who succeeded in developing persistent communities shared knowledge and technical expertise, the study sidesteps Wenger’s framework; it describes a VPCoP with 1000plus members, which clearly breaks away from the traditional understanding of a tightly-knit CoP.

Using information and communication technology (ICT) such as the Internet to support on going interactions, CoPs become increasingly virtual (VPCoPs). This frees their members from constraints of time and space. Chiu, Hsu and Wang (2006, p. 1880) defined virtual communities as “online social networks in which people with common interests, goals or practices interact to share information and knowledge and engage in social interactions.”

The successful sharing of knowledge by a CoP is impossible to realise without the active participation of ideally all its members (Dixon, 2000). Members’ contribution to VPCoPs is not based on commenting extensively, nor is it a requirement to share sophisticated knowledge entries or concepts learnt. For a community to be lively and meaningful members have to participate and activities that stimulate engagement has to be incorporated (Ardichvili, 2008). Activities such as posting questions on discussion boards, engaging in live chats, online participation through responses and comments in discussion threads and video conferencing known as face-time discussions (Ardichvili et al., 2003; Hayes and Walsham, 2000).

3.3.2. Key CoP features in face-to-face and virtual activities of tutorials

The CoP characteristics involve “a shared domain of interest (the domain); engagement in mutual learning and knowledge sharing (the community); and shared inventory of resources (information for the practice)” (Wang and Ma, 2017, p. 21).

3.3.2.1. A shared domain of interest

VPCoPs are not simply students or tutors who have similar basic interests. These participants develop a shared selection of resources: experiences, stories, tools, and ways of addressing recurring problems. This is to say it is a shared practice both online and face-to-face. A CoP is established on the sharing of past and present views that become rituals in the community (Barab and Duffy, 2000). In this study, students from the Teaching Studies 2 B (TST20B2) module meet regularly for tutorials and may not realise that their tutorial discussions are one of their main sources of knowledge of the module. In the tutorial discussions, both in the face-to-face and virtual spaces, tutors develop a range of dialogue and engagement that are shared in their practice. A common shared interest emphasized early on in the data collection for this study, was the mixture of Generation Z and Millennials in the tutorial venues. These students share a common digital interest, merely on the basis that they are techno-savvy.

3.3.2.2. *Mutual learning and knowledge sharing*

According to Wilson (2001) participants in online communities as having a shared sense of belonging, trust, an expectation of learning, and commitment to participate and to contribute to the community. Learning in online spaces is embedded in Vygotsky's (1978) belief that as the students work together in an online learning context to create new knowledge collaboratively results in social cognition. Members of a VPCoP have the potential to support and/or challenge each other with shared knowledge as well as effective and relevant knowledge construction. These are presented as the main dimensions since, sustained engagement between groups of people will eventually create a CoP (Wenger, 1998). Obviously, this would consist of members' practice-related interactions and collaboration to solve problems, develop useful artefacts and discuss relevant issues. Mutual engagement makes VPCoPs task-oriented, setting them apart from fan clubs or socialization communities (Kling and Courtright, 2003; Hinds and Lee, 2008). The area of knowledge that brings members together, gives them a distinct practitioner identity. It also defines the key issues and problems they need to address. Members collectively negotiate their enterprise and hold each other accountable to it (Wenger, 1998).

3.3.2.3. *Shared resources inventory*

An inventory that is shared refers to the information shared. In the mobile learning focused context, the students are able to share information, ideas and viewpoints online. The use of the Internet and the Facebook discussion forum through mobile devices are useful vehicles to share information (Wang and Ma, 2017). The notion of 'bring your own device' referred to students that bring their devices to use actively in the tutorials. In some instances, students may use each other's devices collaboratively to work and assist each other.

3.3.2.4. *Experiences of members in a community*

CoPs and VPCoPs affect the social aspect of learning as members bring their own life experiences to the learning spaces. The activity that members participate in, which results in learning within a CoP, is facilitated by member's collective interactions and relationships to others (Lave and Wenger, 1991, p. 51). When the students share ideas or an interest within the tutorial environment and online, their shared experiences strengthens the

community. The students and tutors' experiences, how they participate, the challenges and their perceptions inform this study.

3.3.2.5. *Mediating tools*

Mobile devices enable students to learn by exploring their world through communication using technology. Facebook enabled students to create VPCoP that support conversations in actual and virtual learning environments. Technology through mobile devices in the lecture venues supports rich conversations between students as an extension of learning (Wang and Ma, 2017). Tools and mediating artefacts include writing, reading, watching and discussions.

3.3.2.6. *Decision-makers*

Members of the VPCoP are the students and the tutors. The role players within the tutorial environment are the tutors divided into senior tutor and tutors. The lecturer is at the top of the hierarchy but has very limited influence in this study since the focus is primarily on the tutor as leaders of tutorials. Leaders have the ability to support practice and the rules. Tutors in this context are considered the content experts and through their experience they are able to support both the practice and setting the rules. A tutor life cycle ends when the need to serve the community is no longer required.

Sociocultural theories suggest that activities of a group can shape knowledge. This submits that opportunities for tutors to assist the students in the tutorial groups are possible when creating opportunities that cultivate collaborative learning. The tutors and students contribute to the learning process as knowledge is located in the community instead of an individual. In the virtual learning communities and tutorial learning communities, the students become collaborative community members completing tutorial tasks as their goal. For the students to achieve the goal and complete the task they have to collaborate and work together. They do so by listening to each other's views, perspectives and engaging in dialogue pertaining to the content to reach their goal. Here students are given the platform to express themselves and engage with the content as well as their peers. Tutors facilitate and mediate when questions are asked or when assistance is needed. When students and tutors relate their experiences of learning and tutoring, this is a reflection of the social and historical aspects of the communities. A tutorial can thus be acknowledged as an activity where students participate.

3.4. How Activity Theory complements Communities of Practice Theory

Activity Theory has influenced several mobile learning studies as a theoretical framework (Uden, 2007; Batista et al., 2011; Wong and Looi, 2011; Lai and Gu, 2011; Wu et al. 2012; Zang and Bi, 2018). Therefore, it is suited to provide a conceptual framework in this inquiry. Within AT, learning occurs as knowledge construction occurs in activities in a CoP.

3.4.1. Activity theory, virtual communities of practice and tutorials

Mobile devices can be introduced and incorporated in group activities. This has the potential to lead to valuable interactions and collaboration within the structured lecture venue and beyond lecture venues and times. Network technologies are essential in enabling practices and sharing among CoPs (Hoadley, 2012). The 21st Century has expedited the development of virtual learning communities through various mobile tools and mobile communication technologies, for example, WhatsApp, LinkedIn, Skype and Facebook.

In the context of tutorial settings, the students are the subject in the activity system. Since AT is the conceptual framework at the heart of this study, further discussion on the subject, tools, outcomes, and community in tutorials, as well as key principles in the activity of tutorials, will now be discussed further below in detail.

3.4.1.1. *The subject, tools, outcomes and community in tutorials*

The tool mediating in tutorials in this study is the mobile device. The secondary tools include tutorial activities, notes, worksheets, social media such as Facebook and Youtube videos. These secondary tools are embedded in the mobile devices that support a mobile learning approach in the learning process. In this study, the result of the activity system was to analyse how the subject (students) adapted to the tools (mobile devices), considering their experiences, practices, perceptions and preferences and how the object (tutorials) was transformed by the activity (tutorials).

Collaboration strengthened the CoP formed amongst the students as the activities carried out individually and in groups were solutions to problems in the virtual community based on tutorial rules and community expectations. Mobile learning through collaboration, flexibility, teamwork and authentic learning environments underline CoP.

3.4.2 Activity Theory principles considered in the activity of tutorials

Activity theory highlights five principles namely:

- a) Collective,
- b) Artefact-mediated and object-oriented activity system,
- c) The multiple voices of activity systems,
- d) Historicity (the central role of contradictions as sources of change and development)
- e) The possibility of expansive transformations in activity systems (Engeström, 2001, pp. 136-137).

Two of these elements closely relate to this study: i) the collective, artefact-mediated and object orientated activity system and ii) the many voices of activity systems.

3.4.1.2. *Object orientated, collective and artefact-mediated activity system*

In AT “objects are cultural entities and the object-orientedness of action is the key to understanding the students’ psyche” (Engeström, 2001, pp. 136). Several objects emerged in this study based on a tutorial plan and common ideas shared by participants. Activity Theory also includes “collective activity that denotes the situated social context [in] which collective activities are carried out” (Uden, 2007, pp. 81).

The community is made up of students sharing the same object. The relationship between the subject and object is supported by the mediated artefacts and mediated tools. The mobile devices incorporated are mediating tools through which artefacts are incorporated online (YouTube video, Facebook platform) in a tangible form (tutorial worksheets) and psychological form (culture or language). The rules introduced by the tutors will control activities and communication in the tutorial activities. The “division of labour” focuses on how tasks are divided horizontally between community members and vertically division given positions of authority (Engeström, 2001, pp. 136).

3.4.1.3. *The many voices of activity systems*

Various behaviours, perspectives and viewpoints are cultivated AT and accentuates the many voices within activity systems because it is not a homogeneous structure. It encapsulates various features, voices and perspectives (Engeström, 1990). Students (Generation Z and Millenials), and tutors have different standpoints on mobile learning.

The subjects (students') have their own views. These views and perspectives shape the division of labour in the tutorial activity and are embedded in levels of traditions and rituals (Engeström, 2001).

3.4.2. Explicit and Implicit Tensions

When looking through an activity theory lens it becomes evident that activity systems are not always homogenous and harmonious systems. There will be tensions (contradictions) with the implications that tensions will always exist (Douglas, 1991). Tensions in activity systems are intended to modify the system since activity systems always adapt in order to resolve the tensions and move towards stability (Jonassen, 2000; Barab and Duffy, 2002).

In order to successfully introduce and implement a mobile learning approaches, the awareness of the ever-changing nature of information and the need to adapt accordingly in order to resolve the disharmony introduced by such change, is crucial. Some tensions are implicit and only identifiable when the activity is initiated, and some tensions are explicitly identifiable prior to the implementation. Tensions identified prior to the implementation of the activity system in this study are the power struggle between the tutors and students. The constant push and pull of who is in charge was evident. Tutors resolve this tension by acting the tutor's role and introducing a new medium of learning in order to resolve the tension.

3.5. Conclusion

This chapter has discussed AT and CoP as conceptual frameworks underpinning this research in tutorial environments. In AT, learning is a dynamic process involved in building knowledge and skills through activities in communities (Sampson, Isaias, Ifenthaler, and Spector, 2013). The next chapter will explain data collection technique: finding, organising and shifting through the data. The chapter focuses on the research methodology, design and data collection methods. Also, I describe the rationalisation underpinning the procedures used to answer the research questions.

Chapter 4. CHAPTER FOUR

4.1. Introduction

Chapter Two presented the review of the literature on mobile learning and tutorials, Chapter Three discussed the theoretical frameworks of this study. In this chapter, I discuss the research methods that were used for data collection; I describe and motivate their selection. This is a qualitative study; it is discussed under the following sub-headings: research approach, research method, data collection, research sample, data analysis, reliability, validity and trustworthiness, ethical considerations and the chapter conclusion. I remind the reader of the research questions below.

1. How do tutors use mobile learning to enhance the way in which they tutor?
2. How do students experience the implementation of mobile learning during tutorials?

4.2. Research approach

The research approach of this study is qualitative. It follows the “interpretive, naturalistic approach to the world” (Denzin and Lincoln, 2008, p. 4). Thorough “deliberation is required when designing a study” (Glatthorn, 1980, p. 53). According to Yin (2009, pp. 18-21) “a research design is a plan that guides the investigator in the process of collecting, analysing and interpreting observations”. The qualitative research perspective was selected for this study and will be discussed next.

4.2.1 Why this qualitative research?

Qualitative research allows the researcher to provide a detailed description of the phenomenon being researched. Through qualitative research an “understanding of how people interpret experiences, how they construct their words, and what meanings they attribute to their experiences” is uncovered (Merriam, 2009, p. 9). Ultimately the process, understanding and meaning of what is discovered is important. Qualitative research is applicable to this study in line with the aim of this study, which was to understand how tutors introduced mobile learning and how students experienced it.

4.3. Objectives and aims of the study

Recall the objectives for this study were:

- a) To determine students' perceptions and experiences of mobile learning;
- b) To ascertain the influence of mobile learning on the tutor, tutoring and the tutorials;
- c) To investigate how tutors might bridge the digital divide gap between students and lecturers;
- d) To examine the contributions of pedagogical development in HEIs in South Africa by analysing the efficacy of mobile learning.

4.4. Research Method

4.4.1 Case study

A case study approach was selected for this study. Yin (2009, p. 18) states, "a case study is an empirical inquiry that attempts to investigate a contemporary phenomenon that occurs in a real life context". Gillham (2000) further describes a case study as an exploration that pursues to answer the research question and does not allow the researcher to control the events as they unfold. Three categories of case study are introduced by Yin (2009): descriptive, exploratory and explanatory.

This study is an explanatory case study, which is a closely examines tutorials and mobile learning at a deeper level (Yin, 2009). This approach attempts to describe the occurrences found in the data in order to understand the students' behaviours in the tutorial setting and how this relates to on mobile learning at HEIs. The students' as an activity is examined. An exploratory case study is appropriate for this research since I seek to understand how mobile learning support learning in tutorials; thus, it is a single phenomenon in a real-life context. Furthermore, this study employed these data collection instruments: focus group interviews, questionnaires and an online discussion forum.

4.5. Data Collection

I used several data sources to collect data for the case study research: questionnaires, focus group interviews and online discussion forum analysis in the context of qualitative research. A brief description of each data source is provided below.

4.5.2 Questionnaires

Questionnaires are a useful means of measuring participants' opinions and perceptions, as well as obtaining demographic data (Christensen et al., 2011). Furthermore,

questionnaires guarantee a high response rate, versatility and require written answers (Thomas, 2009). A standardised open-ended questionnaire was used to collect the participants overall experiences and perceptions regarding mobile learning from students of Teaching Studies 2 B (TST20B2) tutorials. The questionnaire was grounded in the topics used in each of the main contact sessions with the lecturer and reemphasised in the tutorial sessions.

4.5.2.1 Procedures followed during questionnaires

The questionnaires consisted of two parts: Part 1 was conducted prior to the implementation of mobile learning approaches. It captured the experiences and perceptions based on the current state of tutors and tutorials. Part 2 was conducted after the implementation of the mobile learning approach and captured the experiences and perceptions after the tutorials commenced. So, the participants completed an open-ended questionnaire before/and or after the tutorials.

4.5.1 Focus group interviews

The significance of a focus group interview is the interactive discussions. According to Gillham (2000, p. 78) “focus group interviews allow the participants to be open about their feelings when answering the research questions”. This study used the single focus group discussion to collect data (Morgan, 1996). A single focus group is consists of an interactive discussion on a topic by a group of participants in one place.

In a focus group interview, the interviewer supports and creates a pleasant atmosphere in which the participants feel free and comfortable to participate. In this study, focus group interviews were conducted with tutors. A focus group was intended to allow interpretive inquiry using a phenomenological hermeneutic framework (Alvesson and Sköldberg, 2000). Phenomenology means the actual lived experience of the participants (Seidman, 2013, p. 17). Combined with phenomenological experience, hermeneutics enables participants to describe experiences and researchers to interpret meanings of those experiences.

4.5.1.1. Procedures followed during the focus group interview

The group interview commenced with open-ended questions concerning the participants' experiences prior to mobile learning implementation in the Teaching Studies 2 B (TST20B2) module tutorials. In a less structured mode, I allowed the tutors to share their

experiences and perceptions. This is in alignment with Merriam's (2009) statement that a less structured mode is likely to gain the perspective and understanding of the interviewee. I did not interrupt participants as they shared their viewpoints; I probed to follow-up their responses. The tutors for this module had a working relationship already, which added to an open environment and space for them to comfortably share their experiences. They found sharing their perspectives in a group with each other useful for their own reflection and seemed to feed on each other's thoughts.

In conversation with interviewees, the tutors expressed their experiences and viewpoints on mobile learning. This afforded the participants an opportunity to reflect on their experiences through shared dialogue, as opposed to influence from the intentions of the researcher.

4.5.1.2. Audio Recording

An audio recorder was seen as a less intrusive option to capture data for this study; so it was selected for this reason (Merriam, 2009). An audio recorder was used to record all the interviews as it captured the entire conversation, the tone and the pauses, which could be replayed in the future (Kvale and Brinkmann, 2009, p. 179). The uses of the audio recorder helped to correctly and safely store the data for analysis (Merriam, 2009).

4.5.1.3. Note Taking

I made notes during the interviews to formulate follow-up questions during the interviews and capture important and conspicuous information immediately and use as a means of probing later in discussions.

4.5.1.4. Transcriptions

The transcriptions were done in a verbatim; they were transcribed, and the interviewee's exact words were recorded. "Transcriptions are transformations from a verbal language to an inscribed language" (Kvale and Brinkmann, 2009, p. 178). They provide the "best databases for analysis" (Merriam, 2009, p. 110). I transcribed the recordings and therefore had a sense of an "intimate familiarity" with it (Merriam, 2009, p. 110). Therefore I could identify substantive statements – statements that really say something (Gillham, 2000). See Appendix 9 for transcription of the recording (Henning, 2004, p. 76).

It should be noted that the tutorials were conducted after a lecturer. In the tutorials, a tutorial task was completed from which the questionnaires and online discussion forum responses were collected. The focus group interviews were used to compliment the questionnaire and online discussions, which follow next.

4.5.3 Online Discussion Forum

An online discussion forum is defined as a research methodology that builds on procedures to make valid inferences from text (Nor, Razak, and Aziz, 2010). Within this study I investigated the online discussions and displayed the collaborative learning situations (Johnson and Johnson, 1996).

4.5.3.1 Procedures followed during online discussion forum

The participants' online responses were recorded on a Facebook Log 1 (*See Appendix 12*) and themed accordingly. The themes were used to identify trends and patterns. The number of times the students responded on the Facebook page was noted as a "hit". The hits are also used to interpret the participants' behaviour.

4.6. Research Sample

Since the aim was to explore and describe the Teaching Studies 2 B (TST20B2) module, the sample comprised of all the participants involved in the module. Marshall and Rossman (2006, p. 62) observe that it is impossible for a researcher to study "everything, everyplace all the time" and that is why it is imperative for one to choose a sample. This sample consisted of the students registered for the module and the involved tutors assigned to this module. The study used a purposeful and complete sample wherein the entire population of 473 undergraduate students registered for the Teaching Studies 2B (TST20B2) module and five tutors were included in the study.

4.7. Data Analysis

Analysis refers to "making sense" of the accumulated data (Merriam, 2009). This process is further described as the compilation of themed content (Creswell, 2007). "Researchers do thematic content analysis in order to provide a thick description of the characteristics, processes, transactions and contexts that constitute the phenomenon being studied" (Terre Blanche et al., 2006, p. 231). In this study, I took into account mobile devices used for learning, the participants understanding, learning preferences, conduct as well as the

participants personal background influenced by their cultural, values and social context of learning. Miles and Huberman (1994) suggest three strategies employed in this study namely: data reduction, data display and conclusion. First, through data reduction I could draw final conclusions from the verified data due to the selection and conversion process of the data. Second, through data display I began to know, understand, and interpret what the generically presented information gathered stated. Third, through drawing a conclusion I began to decide what the data may mean by considering the “patterns, regularities, causal flows, explanations, propositions, and possible configurations” (Miles and Huberman, 1994, p11).

Focused interviews were conducted with tutors and questionnaires and discussion form responses were conducted with the tutors and students. The focus group interviews were typed verbatim. Several of the participants’ responses in the questionnaire format were put into graphs representations. I also reviewed the participants’ online responses on the Facebook platform. Data was recorded as Facebook Log 1 (*Appendix 12*) and used to identify trends and patterns. Similar responses were linked and formed patterns and ultimately themes developed from the interviews, questionnaires and online discussion forum responses.

After identifying recurrent themes through all the responses and discussions, I identified the subject (the technology user/student), tools (mobile learning technology) and object (knowledge and skills), which are elements of the activity theory. These elements are further identified within a community. The context of communities of practice (CoP) theory assisted me to process and analyse data further.

Several procedures were undertaken to ensure the findings were deemed reliable, valid and trustworthy.

4.8. Reliability, validity and trustworthiness

An important aspect of research trustworthiness is reliability and validity. Miles and Huberman (1994) refer to “reliability as quality control”. When considering reliability, the collection of data should be able to be repeated. Validity refers to the accuracy of the findings using certain procedures (Creswell, 2009, p. 190). Important tactics to consider are the “multiple sources of evidence, establishment of a chain of evidence, and having the draft case study report reviewed by key informants” (Yin, 2009, p. 212).

4.8.1. Several bases of evidence

Multiple sources through means of triangulation were considered in this study. Triangulation is considered when multiple methods of data collection which results from efforts to find further understanding through several bases of evidence (Denzin and Lincoln, 2008; Hennink, Hutter and Bailey, 2011). The main aim of triangulation is to avoid the personal biases of investigators and overcome the deficiencies intrinsic to single-investigator, single-theory, or single-method study thus increasing the validity of the study (Denzin, 1978). In this study, triangulation is achieved through questionnaires, focus group interviews and the analysis of online discussions.

4.8.2. Establishments of a chain of evidence

Through audit trail considerations, I collected data transcriptions, signed consent forms, ethical clearance documents for safe keeping and also included examples thereof in the report *Appendix 5*, where readers can verify that the findings are not false (Schwandt, 2007).

4.8.3. Report reviewed

Consultation sessions with my supervisor and careful consideration of my supervisor's views and perceptions were reflected on to correct any mistakes during the research process (Shenton, 2004). I engaged with other academics during the research process to obtain critical feedback and different perspectives on my assumptions. Research ethics are an important aspect to the study and is discussed below.

4.9. Ethics

Throughout this research process, ethical procedures were considered. Ethics can be defined as procedures that have been devised to define the restrictions of freedom in research (Sarantakos, 1998). I firstly attained the approval of the research proposal higher degrees committee at the University of Johannesburg, Faculty of Education (*Appendix 1*) in order to conduct this study. Thereafter consent, confidentiality and anonymity are highly considered under ethical considerations.

4.9.1. Informed consent

Each participant received a consent form after I explained the purpose of the research and before the tutorials commenced, to ensure that participants were informed and comfortable

with the study. All participated willingly and were not pressured or deceived in any manner (Sarantakos, 1998). Participants were informed of the rules of engagement of the study. I emphasised that sharing their experiences would not influence their academic grades. The participation in the study was voluntary participation following my presentation concerning the details and intentions of the research. Consent from all participants was sought verbally during the recruitment stage and later on written consent was obtained from all participants before conducting the interviews. Additional written consent was sought for using an audio recorder during the interviews (*Appendix 3*).

4.9.2. Confidentiality

To ensure confidentiality, the data was also kept on a private computer and a special password was developed to prevent access to the results.

4.9.3. Anonymity

Anonymity is vital, and therefore all data was collected while maintaining confidentiality. Each participant's identity was protected in order to avoid any potential risks. All identifiable and familiar information from the interview transcripts and questionnaires were detached and not included on the appendix in order to protect the participants (Hennink, et al., 2011; Flick, 2014). Pseudonyms were also used to protect the identities of the participants.

4.10. Conclusion

This chapter has discussed the methodology used to collect data for study. The data was collected from the tutors' and students during tutorial with focus on their perceptions of mobile learning. I described the qualitative design of the study, which underpins this study and the methods of data collection. I discussed the ethical considerations. The next chapter discusses data analysis.

Chapter 5. Data Analysis

5.1. Introduction

In chapter four I outlined the research methodology employed in collecting data for this study. In this chapter, I present the analysis of the data and findings collected during the focus group interviews, questionnaires and online responses. The findings emerging from this data are described and categorised in themes as follows: tutors are able to enhance the way they tutor: 1) through relevant training, 2) through efficacy of a new medium, 3) through cognisance for students learning needs, 4) through strengthening collaboration, 5) through effective feed-forward, 6) through mediation Students ultimately 7) valued techno savvy efforts, 8) enhance appreciated being heard, 9) respected the evolved tutor, and 10) enjoyment of blended tutorials. These ten major themes are depicted in *Table 5.1* and are related to the research questions that will be answered in turn.

Before embarking on the evaluation of mobile learning, the tools, activities, social and physical setting where learning occurs and learning methods used as well as the advancement of learning across contexts is important (Vavoula and Sharples, 2008). The objectives were derived from this premise. With consideration to the tools and activities, the influence of mobile learning on the tutor, tutoring and the tutorials as well as the efficacy of a new medium were considered. The social and physical tutorial environment where learning occurs was thoroughly examined to find deeper meaning and identify advancements as well as hindrances to learning. The objectives and aims in response to the research questions are reflected in *Table 5.2*. There are also interpretations made where an objective and aim is related to both research questions. These will be indicated in turn.

Furthermore, a case study design was used investigate how tutors enhance the tutorial experience of students with the integration of mobile devices. Activity theory and Communities of Practice theory were the theoretical lenses used for this study. These theories were useful vehicles for exploring the potential of mobile learning in tutorials facilitated by tutors and will be further examined in chapter 6.

Table 5.1: Categories of meaning

Themes	Subthemes
1. Through relevant training	<ul style="list-style-type: none"> • Current tutor training • Need for mobile learning training
2. Through efficacy of a new medium	<ul style="list-style-type: none"> • Mobile devices as a tool • Mobile devices for connectivity • Mobile devices for academic use
3. Through cognisance of students' learning needs	<ul style="list-style-type: none"> • The 21st Century students learning needs • Student structured learning
4. Through strengthening collaboration	<ul style="list-style-type: none"> • Working communities
5. Enjoyed blended tutorials	<ul style="list-style-type: none"> • Best of both worlds
6. Through mediation	<ul style="list-style-type: none"> • Divide in peer relations • Lecturer and student relationship
7. Valued techno savvy efforts	<ul style="list-style-type: none"> • Facebook as a catalyst for discussion • FOMO • Cyber bullying
8. Respected the evolved tutor	<ul style="list-style-type: none"> • Tutoring in the 21st Century • The tutors role progressed
9. Appreciated being heard	<ul style="list-style-type: none"> • More student voices
10. Enjoyed blended tutorials	<ul style="list-style-type: none"> • Best of both worlds

Table 5.2: This study guided by research objectives and aims

Research Question	Objectives and Aims
1. How do tutors use mobile learning to enhance the way in which they tutor?	<ol style="list-style-type: none"> 1. To ascertain the influence of mobile learning on the tutor, tutoring and the tutorials. 2. To investigate the possibility of tutors bridging the digital divide between students and lecturers.
2. How do students experience the implementation of mobile learning during tutorials?	<ol style="list-style-type: none"> 3. To determine the perceptions and experiences of the students regarding mobile learning. 4. To examine the contributions of the pedagogical development in the higher education institutions in South Africa in terms of analysing the efficacy of a new medium.

5.2. Recurring themes

This section presents the initial findings and results. A short summary of the findings is presented in *Figure 5.2* and discussed in detail thereafter.

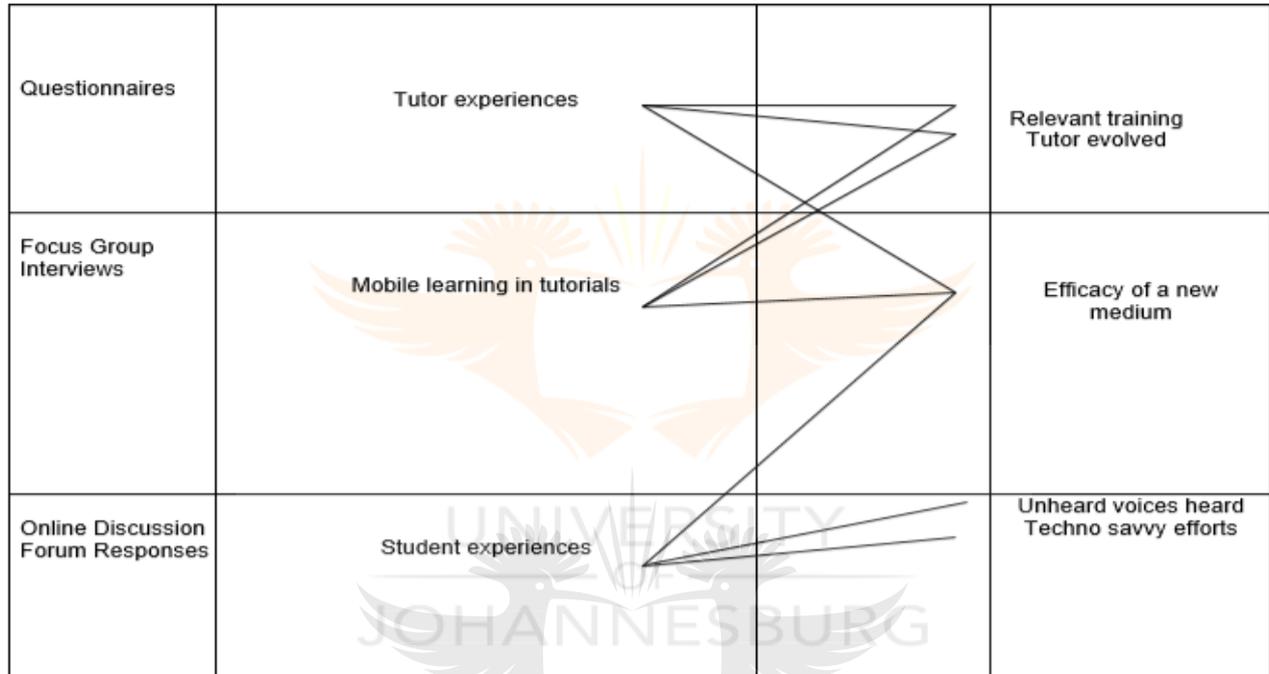


Figure 5.2: Consolidated visual representation of data obtained from participants.

5.2.1. Relevant training

The first theme is derived from the first objective and aim: to ascertain the influence of mobile learning on the tutor, tutoring and the tutorials. The theme is discussed under two categories: current tutor training and a need for mobile learning training. This theme consists of responses from the tutors pertaining to their training. It explores the training tutors received, training that is on-going and their experiences after mobile learning training.

5.2.1.1. Tutor training

The starting point in this theme emphasised key areas of the training tutors have received. Tutor responses prior to the implementation of mobile learning emphasised the key training received. This constituted the basis of the role of the tutor, namely summarizing notes, note taking, note making and classroom management.

Tutor 4: *“... the tutor check-ins included discussion on the role of a tutor, summarizing, note taking, note making and classroom management as far as I can recall. There was no inclusion of technology...”* (T4, 161)

Tutor 4 (added): *“Yes and feedback”* (L153)

Tutor 5 (responded in regard to the check-in training provided by the institution): *“Check-in training is important tutor aspects as a foundation”* (L154)

However the data also revealed negative observations, thus:

Tutor 2 (commented): *“Tech related training would have been nice but there wasn’t”* (L158)

Tutor 3 (added): *“It is basically the same information at every check-in session* (L147)

Thus from the data taken from the focus group interviews with tutors regarding their initial training as the foundation for tutoring, it seem clear that the training the tutors received was more focused on the role of the tutor and aspects related to their administrative duties. These initial training elements had a positive effect on tutors because it provided the tutors with the foundational support and a point of references (Topping, 1988).

5.2.1.2. A need for mobile learning training

A clear lack of training with reference to technological advancements was evident. Tutors lacked innovative ways to administer the tutor check-in training sessions and make it more relevant to the tutors.

Note that before the implementation of mobile learning, tutors attended preparation training.

Tutor 1 (explained): *“We had Blackboard training and also attended online discussions and Facebook for learning workshops”* (L228).

Tutor 3 (added): *“Yes marking on blackboard was clarified”* (L230).

Tutor 4 (added): *“And security aspects student safety online was emphasized”* (L231).

It is evident from the citations above that with the inclusion of mobile learning, training for preparation for mobile learning was needed. This is in line with Bruffee (1993) that one has to establish how one wishes to use tutors, and thereafter establish how to train them for

that end. Tutors in this regard received training to prepare them to tutor both in face-to-face tutorials and on the online learning created through Facebook discussion forum.

5.2.2. Through the efficacy of a new medium

The second theme was derived from the fourth objective: analysing efficacy of a new medium. The theme is discussed under three categories: mobile devices as a tool, mobile devices for connectivity and mobile devices for academic use. I will cite a number of examples and include graphs where applicable to indicate the results from the participants in order to support this conclusion.

5.2.2.1. Mobile devices as a tool

Incorporating mobile devices in tutorials was a new and unique mode of conducting tutorials. A mobile device was seen as a tool to optimise tutorials. The size of mobile devices brought an obvious mobility factor, since participants mentioned the benefit of convenience and portability. A student commented: *“I literally carry my textbooks in my pocket.”* Another student concurred: *“The easy access to information makes things easier”*.

The tutors shared similar sentiments: *“A device is thin, light weight, fits into my bag conveniently and I literally can’t do without my phone. From reminders to note taking, my life is on my phone”* (T5, L63).

Student responses towards the inclusion of mobile devices emphasised the relevance of integrating devices in tutorial environments. A participant reflects:

Integrating devices within tutorials for students within HEIs would be relevant because having access to the rest of the world at my fingertips to view opinions and content easily within the tutorial spaces is relevant. Including devices will also allow us to keep up with the times and do what other institutions are doing. It is also relevant because it is part of our daily lives.

In order to ensure that mobile learning would be a viable idea, the students were asked if they owned devices. As depicted in *Figure 5.3*, 94% of the participants said they owned personal mobile devices. The remaining 6% of the participants did not own a device or were without a device on the particular day of the study. The majority of students participated in mobile learning approaches.

The tutors felt that the inclusion of mobile devices was relevant since technology is relevant. T2 emphasised that *“...on a daily basis our devices are relevant for something, why not for learning as well”* (L56).

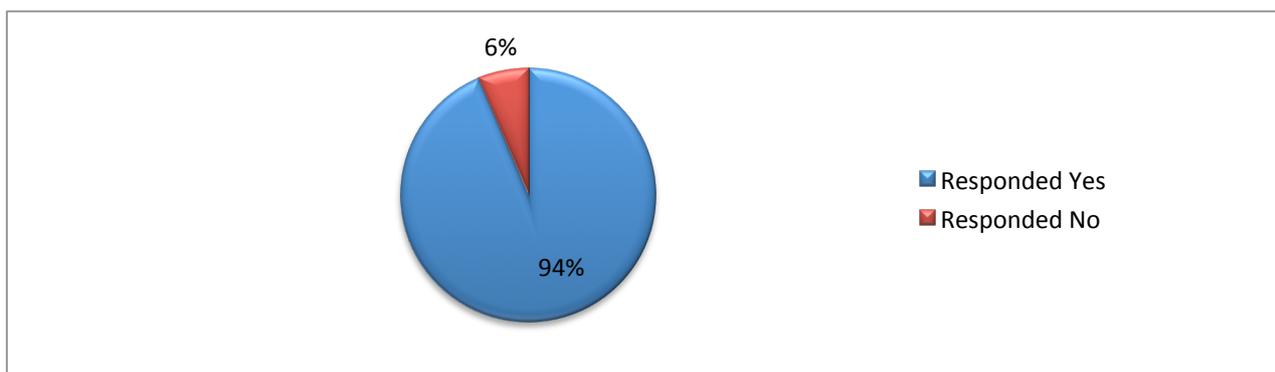


Figure 5.3: Device ownership

The mobile devices influenced the tutoring processes tremendously. Tutoring in its traditional context is perceived as tutoring from the front of the lecture venue in a one-on-many or one-on-one basis.

Tutor 5 (said):

In terms of my experience... we are expected to run weekly tutorials and consultations. That is what the job requires. The lecturers can change things here and there because of their expectations of the module but its mode or less the same. We will have assignment submissions and marking etc., and these are standard across modules. Some of the modules might have oral presentations as an assignment and some might have written essays, but the tutor job or layout is basically the same so to speak. (T5, L38)

The data revealed that with the incorporation of mobile devices the tutors had a sense of mobility in the tutoring activity.

Tutor 5 (commented): *"I have access to the students while traveling"* (T5, L73).

Tutor 1 (elaborated):

Our devices carry so much information and gives us access to applications and emails and important data when we need it instantly. From a student perspective, having a device makes student life easier. From a tutor perspective, having a device makes my job easier. (T1, L76)

The majority of students and all the tutors responded that they had a device that would make mobile learning approaches possible that include handheld computers and mobile telephones and other devices that draw on the same set of functionalities (Traxler, 2007). The convenience of having a learning tool in one's pocket was supported by tutors. Mobile handheld devices such as mobile telephones, laptops, and tablet PC technologies have evolved and with time these devices have become smaller, lighter, and convenient to carry, which makes them conducive for learning (Alsaadat, 2009).

5.2.2.2. Connectivity

The data further revealed that the Wi-Fi access allowed for connectivity in lecture venues and hotspot areas around campus. The connectivity supported the portability of mobile devices. The tutors all have compatible devices and 96% of the students were able to access the Internet through their mobile devices. The remaining 4% were unable to access the Internet on their mobile devices. With access to WIFI granted, students were able to participate simultaneously and incorporate perspectives from the Internet sources.

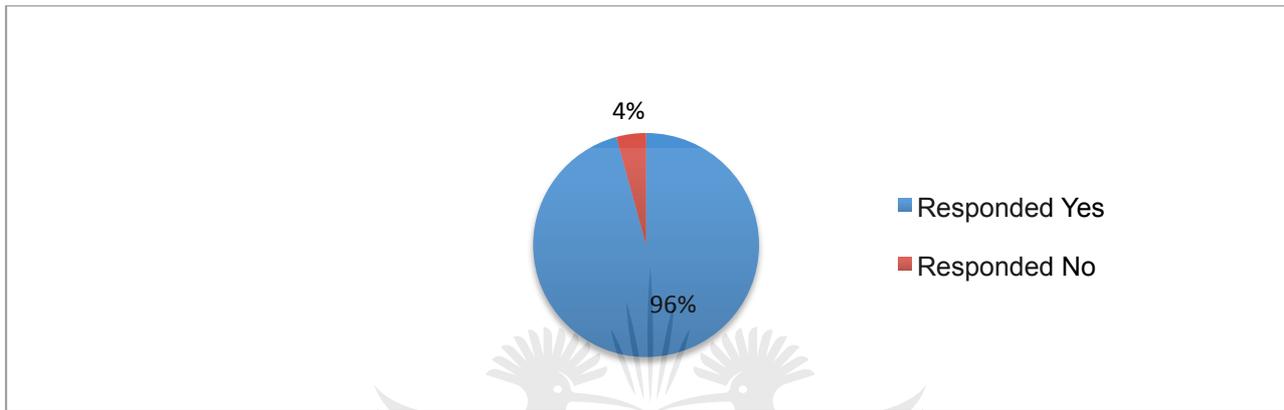


Figure 5.4: Internet compliance

The exploitation of ubiquitous handheld hardware, wireless networking, and mobile telephony to facilitate, support, enhance and extend the reach of teaching and learning within and outside of tutorials is thus possible (MoLeNET, 2010). This tool allows student to be physically mobile while at the same time remaining connected to non-proximate sources of information, instruction and data communications technology (Woodill, 2012).

5.2.2.3. Mobile devices for academic use

Prior to the implementation of mobile devices in tutorials, 56% of students indicated that they do not use their devices for academics. Instead, these students specified that they used laptops and computers in labs on campus for academic work. The remaining 44% of the students revealed that they used their devices for academic purposes when “*accessing email, lecture notes on Blackboard, library and student affairs details*” (Figure 5.5).

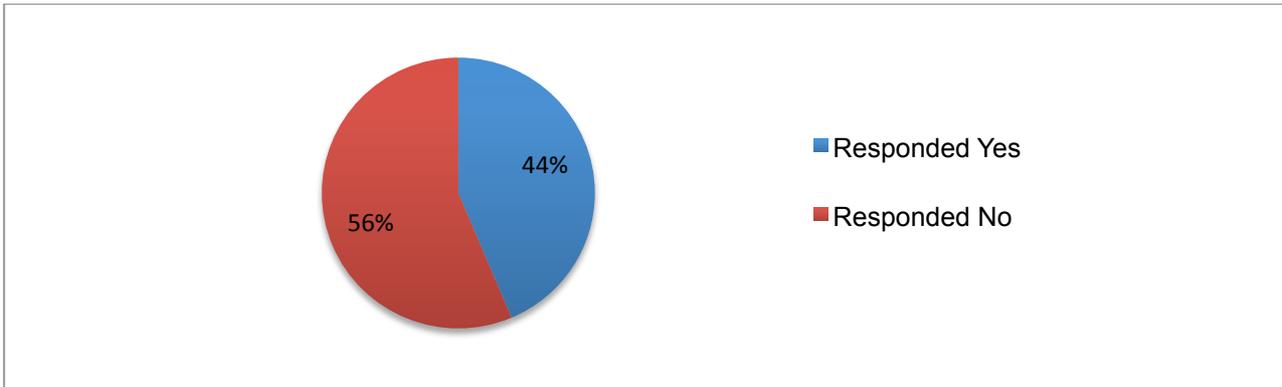


Figure 5.5: Mobile devices for academic use

After the mobile learning activities were completed, students were asked if these activities encouraged them to use their devices for academic reasons. A shift in percentage occurred as 85% of the students used their devices more for academic use, (see Figure 5.6), and they appreciated the mobile learning approach incorporated in tutorials. These students saw the relevance of using their devices for academic projects. The remaining 15% of the students responded no to this question.

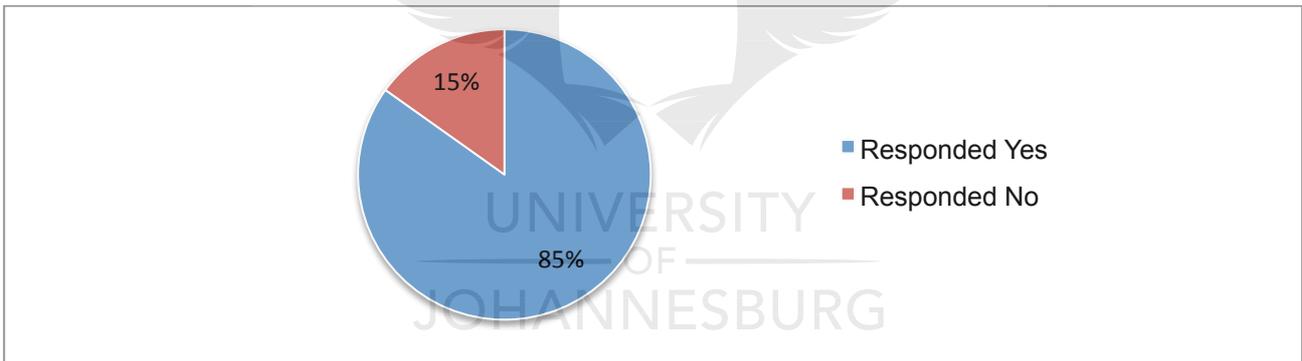


Figure 5.6: Encouraged to use a mobile device for academic use

It emerged from the data that student’s sentiments regarding the inclusion of mobile devices for academic use changed after the implementation of devices in tutorials. Some students tend to be optimistic about using cell phones in class for academics instead of personal purposes, despite knowledge of the possible negative consequences. For these students, mobile devices improved the productivity and efficiency of tutors by delivering information and support just in time and in context of their immediate priorities (Kukulska-Hulme, 2010). However, there were a few students who remain sceptical. These students felt that using their mobile device in class hindered their academic performance (Berry and Westfall, 2015).

5.2.3. Through cognisance of students' learning needs

The third theme derived from the third objective: To determine the perceptions and experiences of the students' regarding mobile learning. The theme is discussed under two categories: the 21st Century students' learning needs and student structured learning. I cite a number of examples, and I include graphs where applicable that indicate the results from the participants in order to support this conclusion.

5.2.3.1. *The 21st Century student's learning needs*

The student demographic in the lecture rooms in the Faculty of Education at the time of the study ranged from 67% Generation Z and 33% Millennials as shown in *Figure 5.7*. Generation Z students, born after the year 1995, were the majority in the lecture room at 67%. The students born between 1980 and 1995, known as Millennials, were in the minority.

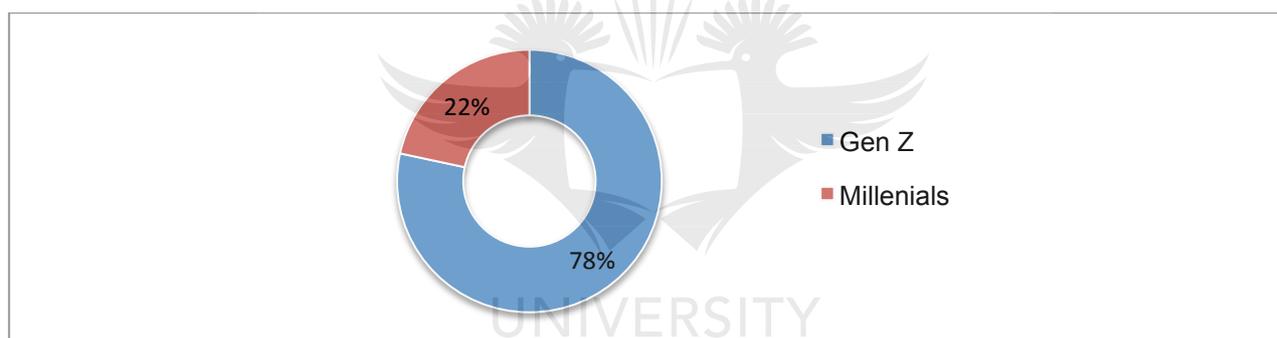


Figure 5.7: Student population for the Teaching Studies 2 B module.

Millennials are phasing into the work place. Generation Z students are the majority in UJ's tutorials. Both these generations are techno-savvy and would comfortably be able to participate in mobile learning activities.

The tutors also shared their year of birth during the focus group interview; they revealed they were generally peers to the students and so had similar interests and learning needs.

Tutor 1: *"I am a Millennial student"* (T1, L88) and (T5, L90) respectively.

Tutor 4 (responded): *"I am Generation Z"* (T4, L91), (T3, L92) and (T2, L89) respectively.

The relevance of mobile devices for mobile learning was further emphasised since the general feeling by tutors portrayed that a change in the tutoring process was needed to improve tutoring.

Tutor 2 (responded):

Being able to change the way we tutor to fit with our context and our students' needs is really amazing. It means that we are providing a service that is actually appreciated and that is needed. There is nothing worse than standing in front of the students who actually see no need for you to be there except for marking the register. I am there because I have something to offer. If I cater it in a way that they can value, then they will see my worth as a tutor. Mobile learning created that opportunity to package our service differently (T2, L62).

Both Generation Z and Millennials fill the tutorial venues, a mixed group although they have different learning needs that are primarily driven and influenced by technology (Pearson, 2018). Ultimately the goal in tutorials is for tutors to simplify concepts. If the students' learning needs are not met, the tutorial will be deemed unsuccessful. Understanding the student demographic in order to consider their learning needs is crucial for this study.

5.2.3.2. Student structured learning

A student-structured tutorial was non-existent prior to the introduction of mobile learning. It merely made sure that the content was repeated. Incorporating mobile learning turned this negative scenario around. It created space for tutors to actually think about what students would find useful, and how best they could package it to benefit the students with a good learning experience. The introduction of mobile learning ensured that students were now more involved.

Student 1: *"I enjoyed the tutorial, it was student focused, I was involved and kept interested the entire time (sic)"*.

Student 2 (responded): *"It was an authentic way to capture our attention and more focused on what is relevant to our world and daily lives (sic). My phone plays a big part in my life, making it part of my academics is obviously going to get my attention"*.

The students were aware that the new approach to tutorials was primarily about them and was aimed at involving them more in their own studies.

Student 3 (appreciated the shift commented):

The change in the tutorials is amazing, you can see that the tutors put in a lot of effort to make the activities to be focused on what we would like and what is relevant to our lives. I log on to Facebook literally like every hour, so now I logged on every hour not only for my

social life but for my academics to as conversations continued. I appreciated that tutorials were focused on us and who things can be more interesting for us.

The tutors generally felt that the tutorials were a success and now more suited to meet students' needs, and how best they would be captivated to participate effectively. In this sense it was more student centred.

Tutor 4: "We made it unique, we made it our own to be a perfect fit for students". (T4, L94).

It is obvious that if tutors are encouraged and permitted to incorporate new ways of learning that are student focused, then technological advancements such as mobile learning could constitute part of this innovation. This would provide a unique learning experience (Traxler, 2010).

5.2.4. Through strengthening collaboration

The theme is discussed under one category: working communities. I cite several examples that indicate the results from the participants in order to support this conclusion. The data affirms collaborative techniques and communities of practice.

5.2.4.1. Working communities

The initial data revealed that prior to the implementation of mobile learning, collaboration was weak. The tutors and students expressed this concern prior to the implementation of mobile learning. According to the students' responses, the blame for poor collaboration was placed on the tutors. The students revealed that the poor participation and non-interest in collaboration was due to the lack of support from tutors.

Student 3 (commented): "*There is no collaboration because tutors spend tutorial time talking [among] themselves, we attend to ensure that we sign the register*".

Student 4 (shared similar sentiments):

The tutors do not make the tutorials interesting enough for us you collaborate because when they stand in front of the tutorial venue acting like the lecture reading from the slides, there is nothing for us to say. Anyway, collaboration should be encouraged from the tutors because if we start talking amongst ourselves without them instructing us to, we would seem disruptive.

Similarly, tutor responses shifted the blame to students:

Tutor 3: *“Sometimes if I am lucky, the students will respond here and there”* (T2, L98)

Tutor 2 (concurrent): *“The frustrating part is that the students don’t come prepared and don’t want to participate”* (T2, L104).

Tutor 4 (blamed the tutors): *“Surely it would be difficult to introduce collaboration and meaningful discussions if the tutors don’t bring the conversations in an interesting and relevant manner to the students* (T4, L114).

Tutor 1(concurrent): *“Maybe how we package the content should change”* (T1, L118).

The data revealed that CoP were evident within this study. The tutors formed a community and spent extensive time planning and strategizing how they would cultivate and support safe and friendly communities amongst students. In the focus group and interviews CoP was evident as the tutors shared their experiences, challenges and possible solutions. The workshops, meetings and training attended by the tutors motivated and empowered them to feel safe enough to ask questions and to work together. Another form of CoP manifested in the tutorials among students. The students already had elements that allow them to form the basis of a community. They all shared interest in education, teaching and learning and in the Teaching Studies 2 B module (TST20B2). Working together in groups and with the tutors was an important element for tutorials to be successful. The inclusion of mobile learning activities took collaboration to a whole new level, namely online virtual VCoP.

CoP was not initially evident in the tutorials. The implementation of mobile learning made tutorial sessions meaningful that developed as a CoP was discovered between the tutors and students. The tutors took responsibility for the poor cooperation and participation of the students and introduced mobile learning into tutorials. With the implementation of mobile learning activities, the students’ attitudes changed significantly. Students were positive and commented that the discussion forums encouraged collaboration even beyond the tutorial venue. Mobile learning also changed tutors’ attitudes.

Tutor 3 (commented):

We must have done something right because the shift from having students falling asleep to students’ discussions and collaboration continuing in and out of the tutorials was impressive (T3, L73).

The community that the tutors formed strengthened further influenced the communities formed among the students.

Tutor 1 (commented):

I think the students saw our teamwork and collaborative efforts and they were feeding off it. Like working in groups within tutorials was easier than I expected because we took a risk to incorporate a social media component that could deviate or derail our tutorial plan. But the students bought into the idea and followed our lead in working together (T1, L133).

Students felt included and they valued the collaborative and social aspects that became an option within group tasks and conversations online. The tutors were an example of what they wanted to see in the tutorials; this allowed and encouraged more students to voice their opinions and understanding. Furthermore tutors worked as team; this was evident in the successful tutorials.

Tutor 5 (commented): *“There was a time the plan slightly changed and we just looked at each other and knew what to do next”* (T5, L131).

When students agree with their tutors, they form social ties. These are important for collaborative learning (Hrastinski, 2008). The forum discussion provides a collaborative learning environment where students learn from each other created CoP.

5.2.5. Effective Feed-forward

The fifth theme derived from the third objective and aim: to determine the perceptions and experiences of the students regarding mobile learning. The theme is discussed under one category: feed-forward. This theme consists of responses from the tutors' and students' pertaining to feedback. It explores collaboration and communities formed within tutorial environment.

5.2.5.1. Feed-forward

Generally, the tutorials were used for feedback from the lecturer and communication between the lecturer and the students. Students felt that feedback from tests or assignments were not very effective.

Student 5: *“It takes for ever to get feedback”*. Another student further concurred: *“The feedback given is also not helpful or sufficient, you still end up having to arrange a*

consultation to explain why you received the mark they gave you or to clarify a short comment”.

The feedback expectations shared by the students were not tutorial related, but module related. The students expected the tutor to be the mediator and give feedback during the tutorials and not only focus on the tutorial content. Incorporating the mobile learning component made feedback instant and easier.

Tutor 3 (said):

I sucked at [giving] feedback. I normally got so overwhelmed with queries that I stopped responding ... But with the devices and Facebook discussion forum it was quicker, like a quick chat response. Some questions were easily clarified without an appointment for consultation, it saved time (T3, L112).

The Facebook application made it easier for tutors to give instant feedback.

Student 6 (commented): *“I loved it, I could just post a comment and tutors informally responded with an answer, even those who were still going to ask the same question, got the answer”.*

Communication initially in the tutorial environment was not conducive for learning. It did not benefit the tutor or the students. Student interaction needed to be encouraged by the tutors to ensure that dialogue, exchanging ideas and clarifying concepts were dealt with. Incorporating a mobile learning approach through social media application encouraged communication online and initiated face-to-face discussions. In order to start communicating online, it was important to establish which social media application would be most beneficial.

Figure 5.8: Facebook was the most popular social media platform among students.

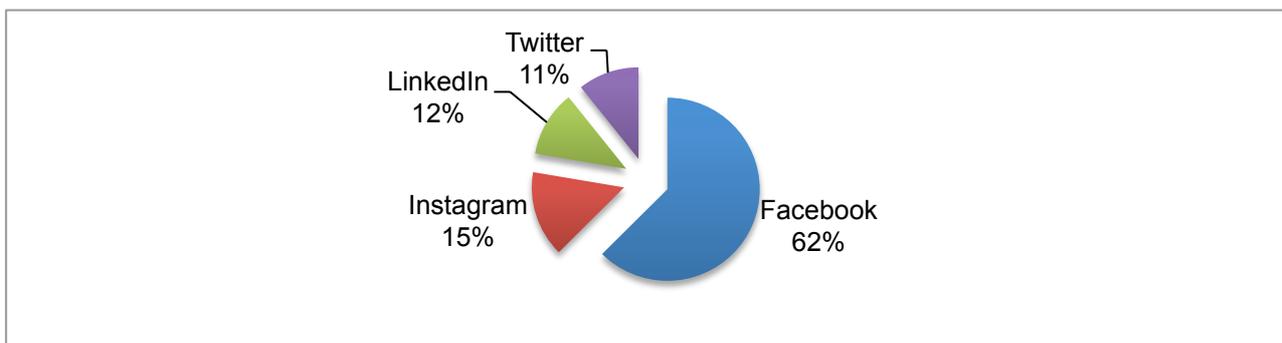


Figure 5.8: Social media mostly used by students

Student responses revealed that 62% of students used the social media platform Facebook, Instagram 15%, with LinkedIn at 12% followed by Twitter at 11%. Several students mentioned that they used more than one social media application but were only allowed to select the one application or platform that they most frequently used for this study. Knowing that students use Facebook was a positive result for this study but their perspective on the implementation of Facebook in tutorials was just as important.

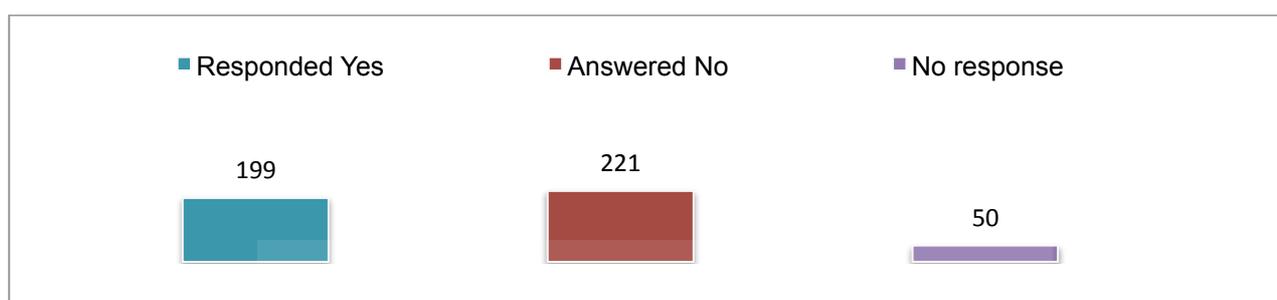


Figure 5.9: Facebook use within tutorials

The majority of the students responded “no” and did not agree that using Facebook in tutorials would be useful at all. From the “yes” responses students agreed that it would be an easily accessible tool for all students.

Student 7 (stated): *Yes, I think it could work because we could all easily be on the same page if we are in the venue or not”.*

Student 8 (responded positively adding): *“Facebook is a social media application and will therefore encourage social interaction especially if you are a shy student and it’s just another way of talking so I think it could work”.*

Students showed interest in the idea of including it but were sceptical of how it would work. The “no” responses revealed this scepticism

Student 9 (sceptically stated): *“No, it could never work, it would be dangerous to allow students such direct access to my personal space”.*

Several students shared this sentiment and were afraid of negative comments and cyber bullying online. *“No, it won’t work because I will be tempted to chat ...; it will distract me”.* Students who responded “no” were reluctant not because the tool could not work for tutorial tasks, but they were afraid that of other students’ comments that might detract from its intended objective.

5.2.6. Through Mediation

The sixth theme is derived from the second objective: to investigate the possibility of tutors bridging the digital divide between students and lecturers. The theme is discussed under two categories: a divide in peer relations and lecturer and student relationship. These tensions were identified as already existing contradictions within tutoring.

5.2.6.1. *A divide in peer relations*

A divide in peer relations amongst the students and tutors was evident. Prior to mobile learning implementation the power struggle was clearly seen. There was a need to motivate student's interest and allow the tutor to facilitate learning while simplifying content in a meaningful way. Student's perceptions of tutors included: *"Imitating the lecturer from the front of the tutorial venue"*.

Tutors did not have control over their tutorial spaces prior to the inclusion of mobile learning.

Tutor 2 (commented): *"It is the frustrating part of tutoring, when you stand in front of the students talking to yourself"* (T2, L104).

Students resonated with these sentiments.

Student 10 (commented): *"Tutorials are a waste of time; the tutor stands in front of the venue talking and has no idea if I am even listening ... I guess it's the same in lectures too"*.

In order for the tutors to successfully and meaningfully implement the mobile learning approach through social media application, a hands-on approach was necessary. The inclusion of mobile learning showed that tutors were better prepared as each tutorial's activity was captivating and well thought out. The tutors moved among students, which the students appreciated for this was learning alongside the tutor at a peer level. The tutors were available within and outside tutorials. The activities allowed new and meaningful discussions in smaller peer groups. After the implementation of mobile learning, tutor became more approachable, accessible and communicated easily as peers.

The students and tutors were of the same generation making it easier to relate content. The peer relations and relatable factor played an important role especially when the students became more receptive to the tutors enabled by the new tutorial structure and

mobile learning efforts.

Considering the tutor as a peer and not as a tutor trying to “act as the lecturer” is an effort to bridge this gap (Underhill, 2009). When the playing fields are even, the teaching and learning relationship between the tutor and student becomes easier.

5.2.6.2. Lecturer and student relationship

The incorporation of mobile learning through Facebook discussion platform and tutorial group discussions enabled the students to realise and appreciate the clarity of concepts, importance of discussions and that active participation with activities increased understanding. This allowed tutors to interact more on a level that students enjoyed and understood. It did however affect the change in attitude towards the lectures as the class attendance dropped.

Student 11 (commented): *“I sometimes don’t understand the lecturer, but I enjoyed and understood the content during the tutorials”.*

A digital divide between the lecturer and student also emerged.

Tutor 2 (commented):

The lecturer gives the content in a lecture fashion and we tutor now in a new tutoring fashion, students attended where they learn more. Well lectures are limited to PowerPoint slides and a YouTube video here and there, but an actual mobile learning approach has not been done in any of the tutorials I tutor (T2, L25).

The techno-savvy traits of the tutors exposed the lecturer’s limited technological efforts.

Tutor 4 (commented):

Lecturers are not technologically educated, excuse my lack of better explanation there but what I am trying to say is that lecturers are reluctant to incorporate various mobile learning approaches because they don't necessarily know how (T4, L14).

Student 12 (comment concurred with the tutor’s view): *“The lecturer uses notes and the tutors incorporated relevant interesting methods. I wish the lecture could be as interesting and interactive.”*

The students related to the tutorials because not only was the content packaged in an innovative and interesting way, but the tutors as their peers brought it in a way that the lecturer had not done. So in this case, the tutor mediates the students and the lecturer.

Student 13 (commented): *“I see the tutor as a middleman, who communicates between the lecturer and us, and makes the content [simpler] different from the lecturer”*.

It is important to mention that the challenges mentioned here were addressed through the inclusion of mobile learning in this study however it had a consequence that lead to a different dilemma.

With the tutorials becoming so *“successful we see a different problem. I think we substituted one problem for another. ...The lecture attendance”* (T237, T1). The data revealed that as the tutorials became popular and interesting, students chose to attend tutorials instead of lectures.

Efficient tutoring is hindered by the “digital divide that exists between the student and lecturer in the higher education context” (Underhood, 2007). This divide places the tutor in the middle. It is believed that educators and students do not fully understand how ICT and learning can work together (Mor, 2007).

5.2.7. Valued techno savvy efforts

The seventh derives from the fourth objective and aim: efficacy of a new medium. The theme is discussed under two categories: Facebook as catalyst, FOMO and cyber bullying. This theme consists of responses from the tutors pertaining to their training. It explores the training they have received as tutors, training that is still needed as well as their experiences after mobile learning preparation training.

5.2.7.1. Facebook as catalyst

By including Facebook as a means of communication in a large group, the discussions taking place in the tutorials were sparked by the comments and responses from online discussions initiated by the tutors prior to and outside of the tutorial venue. This allowed students to come to the tutorial venue prepared on topics to be covered and ready to share their perspectives, understanding and views. Communication between the tutors and students also improved. Prior to the inclusion of mobile learning, it was evident that communication between tutors and students was not effective.

Tutor 5 (said):

Like remember how dead the tutorials used to be. If someone asked a question or had a comment you were lucky... what was amazing is that communication and discussion continued online beyond the tutorial venue (T5, L159).

Mobile learning and particularly the Facebook online discussions allowed tutors the opportunity to respond to one question or comment that the entire group could see. This avoided the same questions being repeated.

Tutors experienced several difficulties because of the tutorial setting. First, students did not cooperate and there was poor participation. Second, poor attendance was a concern: the majority of the time students attended to sign the register. The students who attended the tutorial were disruptive, including sleeping during tutorials. There was a desperate need from tutors to change the situation.

Tutor 1 (commented):

If we ignore the fact that students are not fully participating in our tutorials and we don't try to find new and relevant ways that would interest them, we are failing at our jobs. (T1, L7)

There was a tacit consensus among tutors that the above was a challenge and a concern.

Tutor 1 (suggested): *"Maybe we should suggest new ways of doing things in order to be adequate tutors"* (T1, L46).

Incorporating devices was a relevant solution since students already had these tools.

Student 14 (observes):

We are no longer in a primarily pen and paper, you teach I learn, or you speak, and I listen type of era. I mean students within our tutorials are equipped with so much tools and access to knowledge that the traditional tutoring methods are limiting them instead of supporting them to learn.

It was a gamble; the uncertainty of what the outcome would be was unclear since there was no precedence. It would either be very successful to enrich the tutorial experience or it could be detrimental and have inconceivable consequences.

Tutor 4 (commented): *"Yes, incorporating a tool we have not used before, to students who have not used them in this manner before was a risk. The outcome unpredictable, but do-able"* (T4, L139).

The tutors experienced feelings of doubt when considering the mobile learning approach.

Tutor 4 (commented):

I must confess something: I was a bit sceptical of the Facebook thing during tutorials at first. When the senior tutor spoke about it, I was thinking this will never work. I went in because I appreciated the training and curious to see what would happen (T4, L181).

The novelty of mobile learning meant that tutors had to plan thoroughly. The details involved were meticulous as tutors adjusted their tutoring roles so as to successfully incorporate the mobile learning.

Tutor 2 (said).

The senior tutor was adamant that we plan even for unexpected outcomes; at first I thought this is a waste of time, but by giving us all roles to fulfil a proper planning and training made the tutorials successful (T2, L152).

Doubts continued to plague the tutors even during the planning. It did not deter the tutors from incorporating a Facebook discussion forum in their tutorials. Facebook was included in group work tutorials during tutorial in venues and discussions continued before, during and after online.

Tutor 5 (said).

Our normal routine was preparing your tutorial lesson, walk in the venue and ask for any questions or misconceptions, clarify them if any. Thereafter emphasise the content the lecturer asked you to emphasize, take register and leave, right. Now with the mobile learning, the senior tutor suggested that we implement in the compulsory tutorials, we all have to work together. So, number one, we all have to plan and prepare together. Then two we all walked in the venue together as a team and we collaborated and worked together throughout the sessions. Three, misconceptions and questions were already asked online prior to the tutorial as per the pre-tutorial task posted on the Facebook page. We already responded to those comments prior to even starting the actual tutorial. Four, we emphasised the content as requested by the lecturer in a unique and interesting way and we even took the register on line, how cool is that. Not forgetting the group discussions and task done in the tutorial and the continued culture of having conversations outside of the structured times slot as discussions continued (T5, L196).

Being able to do more and add a different element to the tutorials that was relevant not only to the tutors but to the students as well, created a sense of fulfilment for the tutors. This was a leap from the feelings of despair previously experienced.

Tutor 3 (commented):

In the previous module that I tutored I was not given room to do anything other than the traditional tutoring way, within this module I could offer my technological skills as an ITC major and it was great because I have more to offer (T3, L48).

The majority of the responses were very positive and in favour of the mobile learning through Facebook discussion forum in tutorials. This approach complimented the face-to-face tutorials because of its portability, instant connectivity and efficient communication.

The tutors were expected to respond to comments and misconceptions and control comments that seem to be undesirable. Students were given clear guidelines as to what were acceptable comments. Tutors monitored the discussions alongside the senior tutor to ensure that no comments were offensive. Administrative rights were given to the tutor to delete such posts immediately and report it. No such comments or harmful responses were made during this study. The voices were generally students participating and engaging with the tutorial content. A logging system was used to monitor the participants' registered with Teaching Studies 2 B Facebook page. The logging system shown in *Figure 5.10* gave the researcher an opportunity to identify usage patterns. These were investigated during the interviews. The range of data collected from these logging systems is shown in *Figure 5.10*.

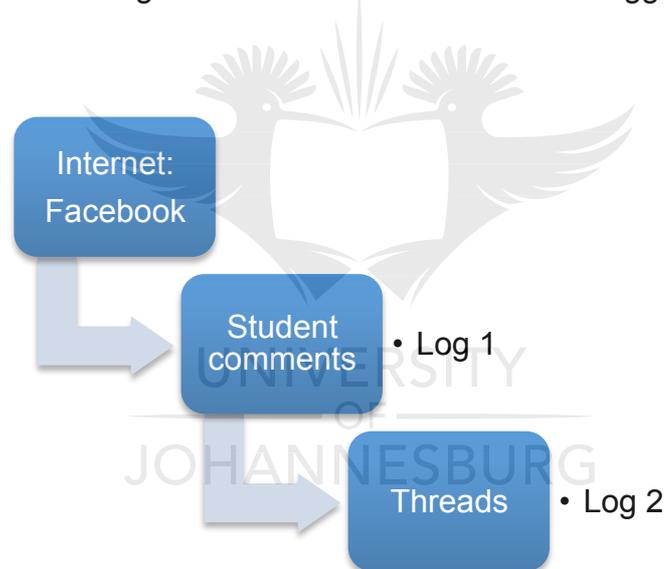


Figure 5.10: Facebook logging system

These logs provide a detailed picture of the on-line presence and comments of both tutors and students. An example of these on-line comments is shown in *Figure 5.11*. For this study, the logging system was used to understand mobile devices access patterns and student responses. The student Facebook comments log and Facebook threads log are included in *Appendix 11* and *Appendix 12*.

The inclusion of the Facebook discussion forum evidently became relatable and relevant to the students. The 21st Century student in tutorial venues embraced the technological change and welcomed the mobile learning approach.

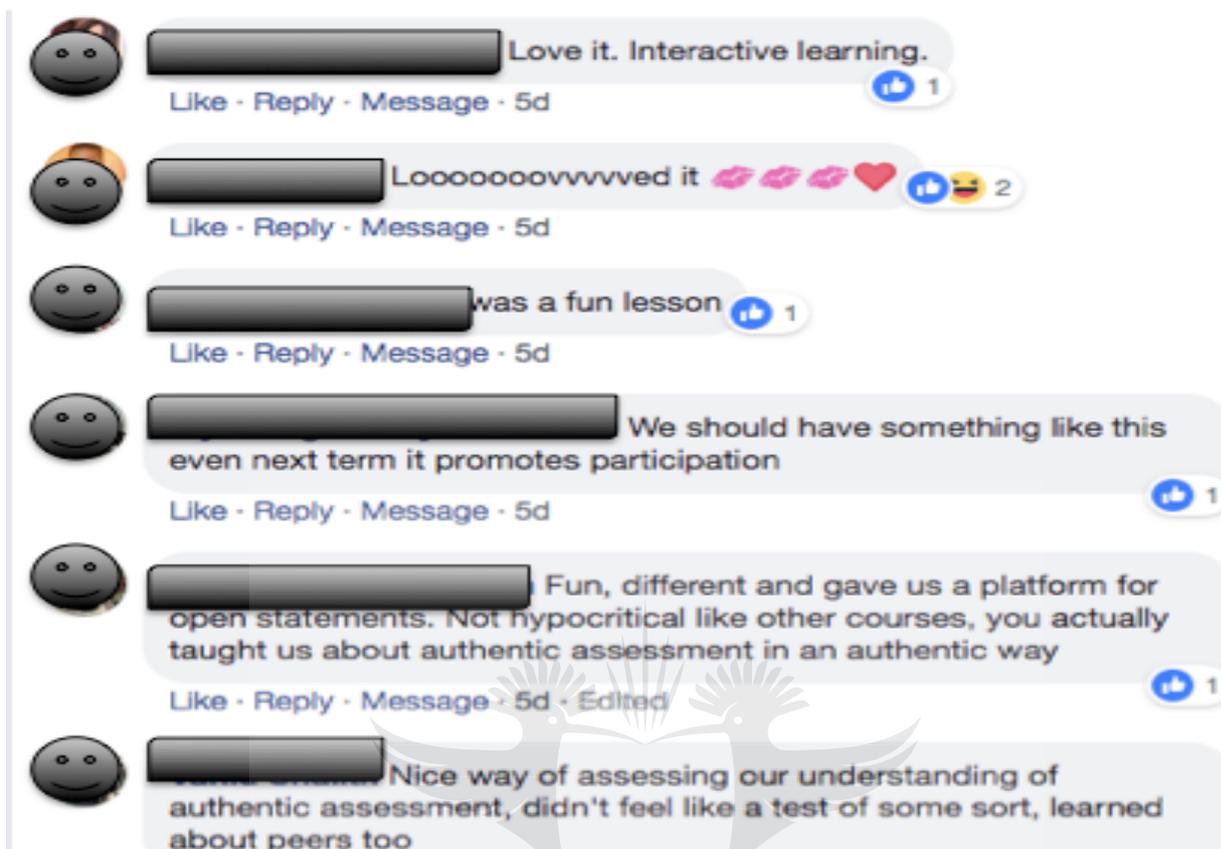


Figure 5.11: Students on-line presence and comments

5.2.7.2. FOMO

For students at HEIs, FOMO is 'real'. There is anxiety of missing out. This applied to all aspects of student lives. The successful aspects of mobile learning were because students did not want to miss out on what was happening in a 'space' where their voices were heard.

Student 15 (responded): *...Although at times at home I won't have data, I make the effort to get to a WIFI area to keep up with what is being discussed. I make the effort because it is important to me and I didn't want to miss out and I didn't want to let my group down...*

Student 16 (commented): *I didn't want to go to the tutorial unprepared. So I remained in contact with the page and accessed it almost every day, just to keep up. There was no way that I can be out of the loop.*

Therefore, including a Facebook online discussion forum was not only helpful and relevant but it was “feeding their desire” to know. By introducing mobile learning, tutors leveraged the FOMO notion to inspire and push students to actively participate in the courses. The quick response from tutors played right into the *happening now* content culture that is relevant to their world. Incorporating Facebook as an educational tool developed team-working skills, became a useful educational tool for tutors, it made learning in the tutorials more enjoyable, “it increased students’ motivation by allowing them to communicate more effectively” (Daraei, 2015, p. 77).

5.2.7.3. Cyber bullying

It emerged from the data that students were aware of safety considerations in online spaces. Students are fearfully of being expose to or associated with any negative activity while participating in online discussion forums.

Student 18 (described his past experience): *I am super worried of being bullied on social media. I don't like exposing myself and feel that anyone can just say anything and it goes viral. I have been through that and it becomes messy. I will only participate in this space if it's strictly focused on the module content; otherwise, I am out.*

Student 17 (said): *Participating make me nervous, Can I create a fake page and respond from there, just to ensure no one knows it's me. Not because I will do anything wrong, it's just a way to protect myself in that space.*

Safety and rules and regulations concerning participation on the online space were thoroughly discussed and mentioned before every tutorial commenced.

Student 18 (added): *I am glad that safety concerns are discussed before we participate, just so we are all on the same page and no one does something stupid. I don't want to be a victim of anything negative online.*

Tutor 1 (shared the same sentiments): *I am appreciative of the awareness and training regarding cyber bullying and how we as administrators of the page can be vigilant online (T1, L237).*

Tutor 3 (answered): *I was not even familiar with this term and these dangers, but now that I know I remain cautious (T3, L240).*

Several challenges and dangers were considered and discussed with both students and tutors. Dangers such as: loss of privacy, bullying and harming contacts (Livingston and Brake, 2010). Studies have revealed that these dangers are not only considered for the students but for the tutors as well. Instructors (tutors) have been subject to this virtual form of ostracism (Minor, Smith and Brashen, 2013).

5.2.8. Respected the evolved tutor

The eight theme is derived from the first objective: to ascertain the influence of mobile learning on the tutor, tutoring and the tutorials. The theme is discussed under one category: tutoring in the 21st Century. This theme consists of responses from the tutors and students pertaining to shift in tutor behaviour.

5.2.8.1. Tutoring in the 21st Century

Tutoring has been altered to fit the student of the 21st Century. The tutoring structure has changed and taken into consideration the South African context: language, traditions and culture supporting learning should be relevant to students at UJ.

Tutor 1 (said):

Maybe students in UJ or our faculty more specifically, respond better to group tutorials where more than one tutor is present. Like let's just think of the shift in atmosphere. Maybe they need and respond better when more hands are on deck (T1, L212).

Standing in the front of the venue, re-teaching the information and asking questions does not constitute meaningful engagement. The shift in tutoring through the implementation of mobile learning changed attitudes and perspectives; it gave the students a different tutoring and learning experience.

Tutor 3 (commented): *"We catered for the demand of the type of student we have"* (T3, L13). *"Being able to change the way we tutor to fit with our context and our students' needs is really amazing. I loved tutoring this module"* (T3, L53).

Further responses from the online logs (Appendix 9) revealed that these 21st Century students participating in the tutorials were evidently interested in a new, authentic and technological way of conducting tutorials. Here are three students' responses from the online log:

Student 19 (responded): *"Looooooovvvvvved it. Interactive learning"*.

Student 20 (added): *“We should have something like this event next term it promotes participation”.*

Student 21 (concurred): *“Fun and different. Gave us a platform for open statements...”*

The effectiveness of mobile learning can be seen in the shift from what the students perceived the role of the tutor to be, to what the tutor were actually doing and the change in the tutoring methods that followed.

Prior to the inclusion of mobile learning, the majority of students seemed to be unclear as to what the role of the tutors was. They made several comments on the challenges that they experienced with their tutors and the tutorial methods they employed. Students mentioned that tutor stands in the front of the lecture room and explains the work. Students expected that tutoring from tutors would be more effective and less time-consuming. A large number of students involved in the module made it difficult for tutors to share all the questions in the allocated time and therefore could not cater to everyone's needs. In the students' opinion, the tutors tended to talk to themselves. Students' also mentioned that they attended the tutorials mostly to sign the attendance register. For the students, it was easily noticeable when tutors were unprepared, as they tended to read from the lecture notes. Students mentioned that the tutorials became a waste of time because they did not improve the knowledge picked up in formal lectures and did not get their questions answered. A common sentiment among students was that they did not want a tutor who read from the lecture slides; they wanted a tutor who could simplify content and make it understandable.

The inclusion of mobile learning brought a change amongst the tutors; it allowed them to become more efficient and seized the opportunity to capture students' attention and simplify the content. The tutors' role was made clearer as students responded positively and mentioned several aspects of the tutors' role that were now more explicit. There was an obvious shift from the tutor standing in the front of the venue to a tutor who was moving amongst the students, was approachable and accessible. The tutors cultivated an inclusive approach and created safe spaces for collaboration amongst the students.

The majority of students responded positively to the innovations in tutorials. They appreciated the shift from the tutor standing in front of the lecture room reading the notes and explaining concepts, to a more inclusive approach. Tutors gained the respect of the

students. The tutor's role progressed to peer and a co-learner that was separate and decidedly different from the role of the lecturer (Barnett and Blumner 2001).

5.2.9. Appreciated being heard

The ninth theme derived from objective three: to determine the perceptions and experiences of the students regarding mobile learning. The theme is discussed under one category: more student voices. This theme consists of responses from the tutors and students pertaining to participation.

5.2.9.1. More student voices

Student participation increased drastically as more student voices were heard in the tutorials and online. Students further felt that their learning needs were catered for, activities were fun and different and this made the tutorial enjoyable.

Student 22 (responded):

The tutors cultivated an inclusive approach and created safe spaces for the collaboration amongst the students". Another student response: "I was shy before and would never answer out loud in a tutorial, but the online space created an opportunity for me speak.

Student participation increased drastically as more student voices were heard in the tutorial and online. Students further felt that their learning needs were catered for and this made the tutorial enjoyable.

Student 23 (responded): *"It was more effective this way, I actually learned something in the tutorials and I actually had fun"*.

The continuous discussions in and out of the tutorial allowed more students to interact and give their views at any time. There was no time restriction and students were allowed to respond in their own time, even outside of the tutorial time. This means that students running late or absent on the day could still be part of discussions or have an idea of what has been happening within the tutorials.

Evidently sharing knowledge and information online allows students to connect in the tutorial venue and to "connect the classroom (tutorial venue) with speakers around the world, bring quiet students out of their shell by asking them to participate in Facebook discussions, create study groups to easily connect with each other within their own Facebook groups, track down old students or professionals that could come to the

classroom as guest speakers, connect with classes all around the world, and discuss classroom ideas with other teachers on Facebook (Espinosa, 2015).

5.2.10. Enjoyment of blended tutorials

The tenth theme derived from both objectives one and three: to ascertain the influence of mobile learning on the tutor, tutoring and the tutorials, and to determine the perceptions and experiences of the students regarding mobile learning. The theme is discussed under one category: best of both worlds. This theme consists of responses from the tutors and students pertaining to blended learning with tutorials.

5.2.10.1. Best of both worlds

Although the majority of students welcomed the inclusion of mobile learning, there was still an appreciation for the traditional tutorial venue. The online component did not affect the tutorial attendance, in fact the negative impact was evident in poor lecture attendance.

Student 24 (commented): *“I prefer the normal way... the tutors just need to have the same energy and commitment when there is no gadgets involved”*

Student 25 (mentioned): *“I loved it. Every second of it, even when I was home, I could continue talking... I wish this was incorporated in all my modules because now I find myself taking more about this module than the rest”*.

Student 26 (comment that brought middle ground said):

I like the tradition tutorials but I love the online element to it. If I am late, I can be up to speed from my device while sitting in the taxi. Although at times at home I won't have data, I make the effort to get to a WIFI area to keep up with what is being discussed. I made the effort because it was important to me and I didn't want to miss out and I didn't want to let my group down. I also appreciate tutorials, especially now that everybody is talking. Can't we just put both ideas together and have the best of both worlds? I don't think this should be once off just as an experiment or something. I think we should do this regularly and in more modules.

The students saw value in adding mobile learning. They also had an appreciation for the physical tutorial environment. Perhaps a blended learning tutorial approach would be a

more socially just since it would accommodate all views and all students, not only the majority who embraced mobile learning. Mobile learning opened our minds to the possibility of a radically new paradigm and encouraged us to abandon the constraints of our habitual ways of thinking, learning, communicating, designing and reacting (El-Hussein and Cronje, 2010). The limitations of where learning should take place, at what restricted time, through a scripted curriculum guided by a specific textbook only, has changed. Students embrace technology and have respect for the traditional classroom method. Even though mobile devices are shifting the goal posts of traditional boundaries of learning, we should embrace both worlds.

5.3. Conclusion

In this chapter, I presented data thematically based on categories. I discussed the analysis of the data, coding and the concept of communities of practice. The findings from the questionnaires, focus group interviews and online discussion responses were discussed in detail as well as recurring themes that were presented. The themes presented and discussed were: 1) through relevant training, 2) through efficacy of a new medium, 3) through cognisance for students learning needs, 4) through strengthening collaboration, 5) through effective feed-forward, 6) through mediation, 7) valued techno savvy efforts, 8) enhance appreciated being heard, 9) respected the evolved tutor, and 10) enjoyed blended tutorials.

In the next chapter I discuss the findings in this study in the context of AT and VCoP.

Chapter 6. Discussion of findings

6.1. Introduction

In the previous chapter, I analysed the data collected that I categorized into themes in order to understand how tutors and students perceive mobile learning to enhance learning. In this chapter, I discuss the findings in light of the literature I discussed in Chapter Two. What are those hindrances or motivations that influence effective tutoring and learning? This investigation explored tutorials in HEI. I examine the data collected to find out how tutors and students experienced mobile learning.

6.2. Interpretation of Activity Theory in the study

When I examined the findings using AT as the theoretical framework, I discerned from the data a system of activity in the tutoring system. Recall that AT emphasises the following: subject, tools, outcomes and community that then emerged from tutorials. This is the basis of using AT as the conceptual framework for this research. The intended outcome of the tutorial activity system was to analyse how the subject (students) adapts to the tools (mobile devices), and how they transform the activity object (tutorials) to enhance learning (see *Figure 6.1.*).

6.2.1. The subject adapts to the tools based on practices and preferences

The blends of Millennials and Generation Z were the current students (subjects) in the lecture rooms (Ally, 2004). In order to create effective tutorials, it is important for tutors to consider that students of the 21st Century are referred to as 'digital natives' because digital technologies form an integral part of their daily routines (Prensky, 2009). For this reason, it would not make sense to have tutorials that are not digitally and technologically oriented to suit these digital natives. It is a fact that Facebook is their number one social media application (Pearson, 2016).

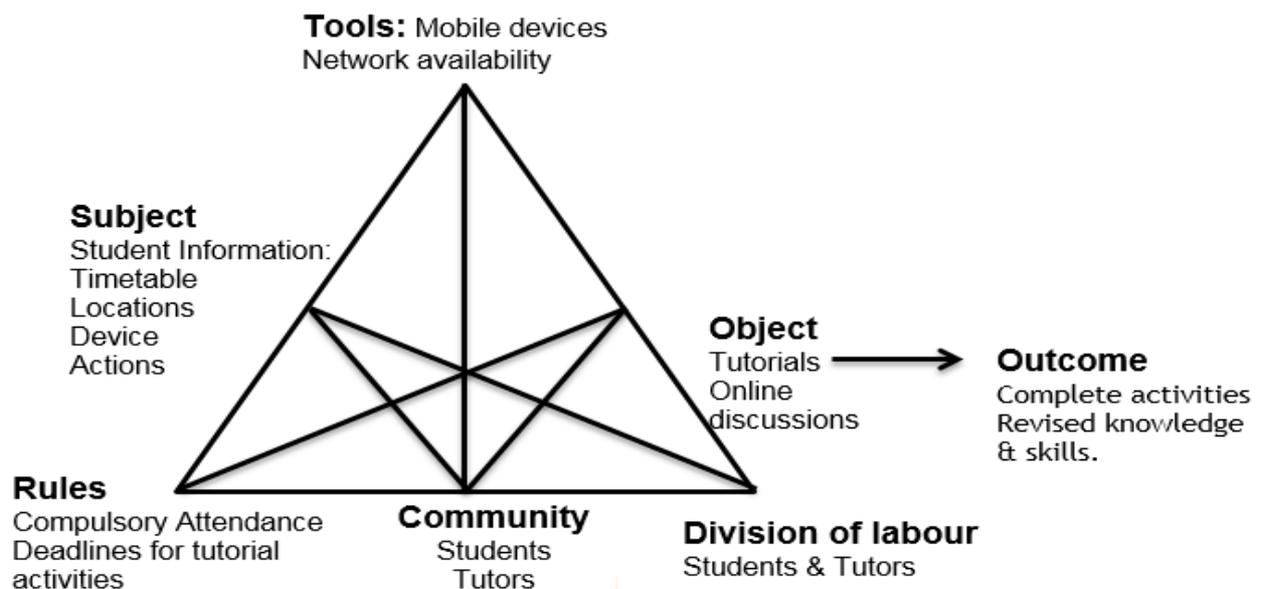


Figure 6.1: Activities in tutorials (Engeström, 2001)

So, it is reasonable to expect that students of the 21st Century will be eager to adapt innovative ways of learning that include technology, mobile learning and the like to solve problems (Angeli and Valanides, 2009). Accordingly, Facebook and similar social media can be used as discussion forums that cultivated critical thinking and authentic learning, after all, these students are already equipped with personal mobile devices that are Internet compatible (Klimova and Poulouva, 2011).

The BYOT initiative to support mobile learning brought the tutorials to the students since tutorials could also be online granted that students have mobile device. As I have already mentioned, this has changed how tutorials are run because students can now learn through their mobile devices (Traxler, 2011). In spite of this advantage, 20% of students still did not have personal devices for tutorial purposes because they did not own a device, or it was lost or stolen. In some cases, students left their devices at home due to the fear of being robbed or not feeling safe to travel with it to campus. One way of going around this huddle, was to encourage students to work in groups, to share with those who had mobile devices.

Mobile devices were initially used to access the Blackboard system, library and emails and primarily used for social media applications (Pearson, 2016). Incorporating a discussion forum through the social media application Facebook was both risky, yet relevant. So, for the tutors, this was a colossal advantage they could tap into to implement mobile learning.

But there were security risks involved due to the open platform; it gave access to anyone to comment and perhaps engage in inappropriate online behaviour. The devices in themselves are a risk as students have the liberty to message, browse and be distracted by social media. Clearly, there are several dangers that need to be considered. Some studies have shown that social networking has risks that include: loss of privacy, bullying and harming contacts (Livingston and Brake, 2010). Studies have revealed that these dangers are not only considered for the students but for the tutors as well. Tutors have been subjected to virtual forms of ostracism (Minor, Smith and Brashen, 2013). Minor, Smith and Brashen (2013) make recommendations that could mitigate these risk. They include a zero-tolerance policy that is clearly communicated to faculty and students alike that there will be consequences for students that demonstrate unacceptable behaviour.

Notwithstanding these dangers, the implementation of mobile learning opened a window into the virtual space for learning. Tutors incorporated online discussions in spite of the scepticism. Mobile learning technologies have become a catalyst in the transmission and conveyance of information. The results revealed that students preferred an innovative approach to learning in the form of mobile learning introduced in tutorials. The tutors appreciated the evident change in both the tutorial environment and students' attitude.

6.2.2. The subject and tools transform the activity object

The majority of students initially had several challenges with the tutoring system. They mentioned that in the traditional tutorials tutors were not effective because they were unprepared, which made them inefficient. Cheung and Hew (2009) agrees that traditional tutoring approaches emphasised that face-to-face discussions revolved around the tutor. This limits students' opportunities to learn through interacting with their peers. However, the implementation of mobile learning has shifted students' attitudes about tutorials. Students appreciated collaboration and social aspects introduced by mobile learning, flexibility of tutor's availability outside the tutorial venue and the continued discussion spaces long after the physical tutorial has ended. According to Koole (2009), mobile learning has personalised learning since it now takes place any time and any place within limits of course. The majority of the students embraced the change because they found it to be fun and an easier way of learning. Moreover, it includes technology, something they are very conformable with given that they are digital natives.

While it is fair to argue that the implementation of mobile learning was effective possible because the tutors took charge of tutorials, there was a minority of students felt that the old traditional methods kept order and felt that mobile learning would be best implemented alongside face-to-face learning.

According to Nawan and Khan (2012), both the number of university goers are increasing as well as Information and Communication Technologies in HEIs. The fact that HEIs are open to embracing new technology, it should seem obvious that tutoring as a mechanism of reaching students should also promote mobile learning. The reasoning behind is that most of the students have mobile devices in addition to technology that is developing to support the possibility of mobile learning. Granted that tutors are peers of the students, this relatable advantage plays a huge role in the extent to which tutors can influence how students learn. Analysis of the data revealed that when tutors move between students during tutorials, the students appreciated this closeness compared to when the tutors stood in front of the students during tutorials.

According to Vygotsky (1978) learning is a social and cultural process where the more experienced other teaches the less experience; in this case, tutors support students whether it is in the traditional tutorial or mobile learning tutorials. The tutor enforce note taking, discussions and debates. Vygotsky theory is still relevant even in the mobile learning environment. Tutors who are more experience will have to support students who are less experienced in a blended learning environment, be it using Facebook discussion forums and or group discussion in traditional tutorials.

Suffice it to say that in a blended learning environment, tutorial have ultimately transformed where meaningful discussions and participation in learning are encouraged and supported. This includes on-going discussions beyond a physical tutorial on mobile devices in Facebook.

6.2.3. Technological and semiotic perspectives

Using AT, I now consider the two features of mobile learning: a) learning with mobile devices and b) learning while mobile (Sharples et al., 2007). The findings revealed that students learned both with their mobile devices in the structured tutorial timeslot and outside of the tutorial setting while mobile. Learning within tutorials and outside of the tutorial environment means of the devices can be either isolated or a joint activity. Mobile

devices interact with our environments and immobile objects respond to individuals constantly on the move (Figure 6.2).

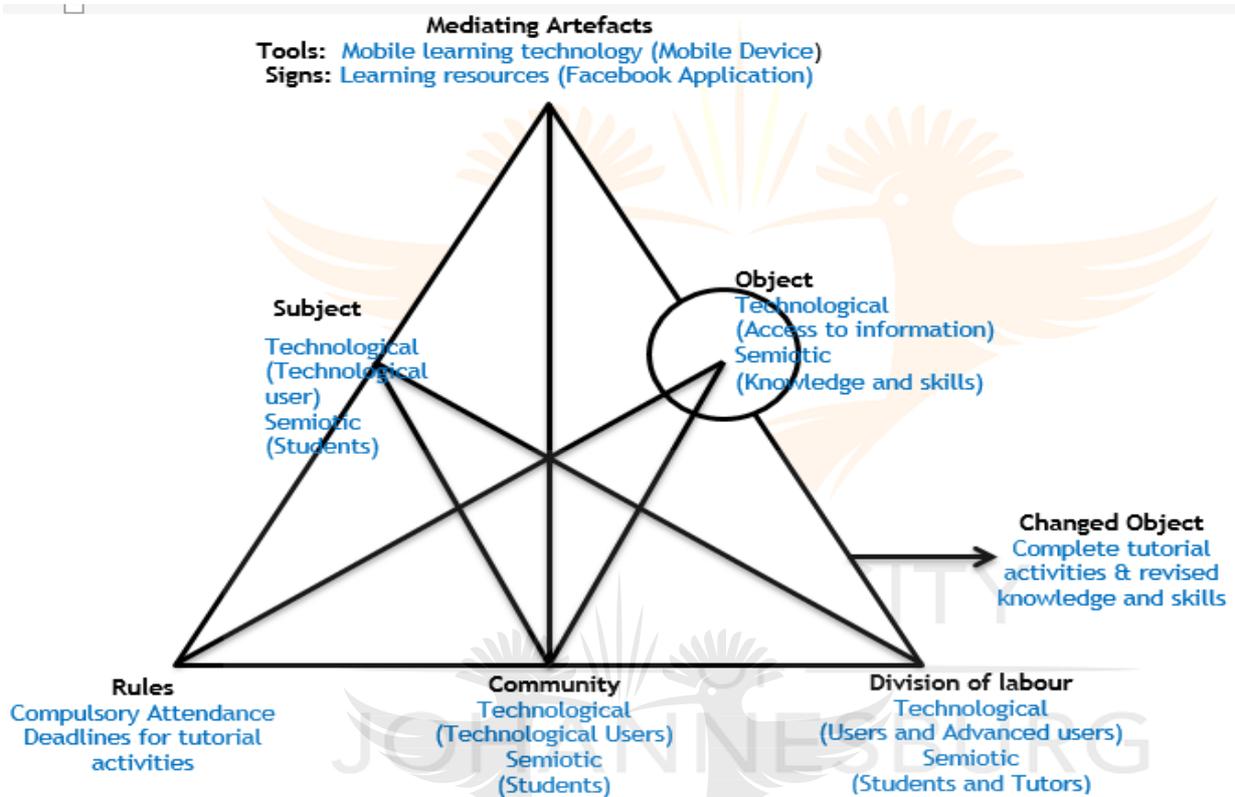


Figure 6.2: Activity tutorial learning (Engeström, 2001)

In mobile learning, technology is at the core of learning. In this study, this is important from the two angles: of tool-mediated activity, such as the semiotic perspective and the technological side. The semiotic perspective considers the student's actions to promote an objective. Learning on this account is described as a semiotic system facilitated by cultural signs and tools. From a technological viewpoint learning forms a commitment with technology where tools in this case, mobile devices are interactive instruments in the progression and development of learning. A human technology system is therefore created to communicate, to mediate experiences and ideas between students and to aid recall and reflection, for example using Facebook online discussions forums.

The technological aspects within tutorials supported and enhanced the semiotic activities that contributed to a meaningful learning experience for the students within this study.

The results revealed a dual force in which the technological and the semiotic perspectives were a catalyst of mobile learning. The corresponding equivalents in the technological space enhanced the experience in the semiotic domain (Sharples, Taylor, and Vavoula,

2006). As new technology (mobile devices) were introduced, these mobile devices enhanced the learning experience but also became the object of learning. The interchange in the object of learning is better understood through the content emphasised by the tutors. The tutor facilitated the use and understanding of the new technology by using content, but simultaneously helped to understand how the new technology can benefit the students to understand the content of the module.

6.2.4. Activity Theory identified tensions and contradictions

AT identifies tensions and contradictions in activity systems, which predictably constrain the subject from accomplishing the goal and object of the activity. New contradictions are the result of learning as a technology-mediated method of learning through dialogue across contexts. This concurs with Sharples, Taylor and Vavoula (2006, pp. 221) stating that “these tensions do not arise from some wish by the authors to challenge formal education; they already exist in society”. The tensions that arose in mobile learning relate to the synchronization of lecture and tutorials, which I discuss below.

6.2.4.1. *Synchronize the lectures and tutorials*

The first contradiction that unfolded in this study emerging from the data was between the role of the tutor and the lecturer. The lecturer is ultimately pleased that the tutors conducted successful tutorials as instructed and expected but the data however revealed that because of the successful implementation of tutorials, class attendance was negatively affected. The class attendance dropped as students opted to attend tutorials instead. This was due to the relevant and new appealing learning approaches introduced. The students want to learn, but it seems, from this experience, that they will attend where their learning needs are met. Perhaps with strategic planning, introducing mobile learning in lectures is a conceivable proposition.

6.2.4.2. *Tutor as peer*

The term tutor already suggests a divide between the students and tutors since students automatically see the tutor as superior (Underhill, 2009). That gap widens when the tutor receives further training. In this study, the playing fields seem to even after the introduction of mobile learning. The tutors assumed a new tutor persona that favoured them to be seen more of as peer rather than tutors for reasons discussed elsewhere in this study. In addition, students were receptive to mobile learning contributions because the tutors introduced the concept from peer tutor perspective and not from the front of the venue, as

a lecturer.

6.3. Virtual Communities of Practice

Here there are two basic ideas that are central to AT: the human interaction with the world and the social interaction that leads to development. The significance of this lies in the need to supplement AT with VCoP theory. The data revealed that the mobile learning approach brought about collaboration that resulted in meaningful and useful tutorials in the virtual learning environment. Mobile devices enabled communication and collaboration among multiple individuals and systems (Koole, 2009). Collaboration among students allowed tutors to overcome hurdles that were evident prior to the introduction of mobile learning. These hurdles included ineffective feedback, insufficient support and ineffective tutorials. Students were no longer isolated and inactive during tutorials. This fact of being actively involved in the tutorials constitute a CoP (Habhab-Rave, 2008). Working together as a communal unit and sharing ideas through mobile devices was the basis upon which the tutorials were structured and functioned. Knowledge and skill were gained by observing and participating and by learning in conjunction with other members in the group (Schlager and Fusco, 2003). It seems reasonable to infer that tutors influenced and encouraged VCoPs since they had the ability and the interest to support it because it made learning possible.

6.3.1.1. Ethical considerations

When tutors engage in online activities, they are bound by ethical considerations in UJ's code of ethics pertaining to the use of social media. These are rules and regulations that pertaining to the proper use of the institutional Internet facilities. They stipulate what is acceptable behaviour and what is not acceptable behaviour in this space and how the university might deal with those who infringe the code of ethics. Incorporating mobile learning successfully and having meaningful discussion forums through Facebook put tutors at risk of ethical and legal concerns. Therefore the importance of training and awareness of cyberbullying and risks involved was crucial. These concerns may not be unique to on-line teaching that raise risks such as an unacceptable use, privacy, licensing, piracy, copyright, fair use, plagiarism and ownership. They create new dimensions that imply different consequences for on-line education (Mpfu, no date).

While, mobile learning supports on-going learning and always creates ideas, the traditional classroom approach is pressured by the developing times of both technologies and of the

digitally conscious student. “Older philosophies assume that learning only takes place in a classroom, facilitated by a teacher” (Sharples, Taylor, and Vavoula, 2007, pp. 221). This is considered as the traditional classroom approach and is put under tremendous pressure by the evolving technologies. An ever-evolving digitally conscious student also threatens it to keep up with the new times, new technologies and new teaching and learning opportunities. Using technological advancements that allow students to connect freely mobile learning might mitigate these pressures. This is learning beyond the traditional learning borders that create great contextual experiences.

6.3.1.2. *Authentic learning experience*

The students’ learning is deepened and creates authentic relations to the content. Outside the lecture venues, conversations, dialogue and engagement continue to meet students’ needs. Therefore mobile technologies and mobile learning bring forth a sense of autonomy, agency, empowerment and authentic learning to students. Mobile learning opens minds to the possibility of a radically new paradigm of teaching and learning that encourages us to abandon the constraints of old habituated ways of thinking, learning, communicating, designing and reacting (El-Hussein and Cronje, 2010). The digital change is the new dynamic of learning that cannot be ignored. This digital change gives way to new learning opportunities to the future of education built around each student and their personal choices of where, when and how to learn. This cultivates new learning opportunities that are relatable to students day-to-day activities, where students learn together and from each other, and where educators function more like facilitators of communities built around shared learning CoP that make learning an authentic learning experience. Lastly, the constant connectivity and wireless participation allows students to participate from anywhere and at any time. This feeds into their FOMO and mitigates anxiety. The fear of missing out is no longer an issue merely because they are invariably connected online.

To assist tutors in understanding issues of discourse I presented models of mobile learning within the classroom environment. The model was adopted and is introduced as a contribution to this study. The aim was for tutors to be explicitly prepared to implement mobile learning in tutorials, while ensuring that they are well trained and informed on how to conduct themselves while with students online or in physical tutorials.

6.4. My development as assistant lecturer

I have discussed the ways in which the tutors were developed and in doing so I have identified the changes I have contributed to the tutoring processes in the module I tutored. For example, I mentioned how I included a mobile learning approach in tutorials to enhance tutoring and ensure that tutors are 'hands-on' to allow tutors to be more available to students, for example, giving tangible feedback. By working closely with the tutors, I refined how to manage and train the tutors more effectively, how to listen to their viewpoints and how to include their opinion and expertise in tutorials. After each tutorial session, I conducted a post-tutorial discussion where the strengths and weaknesses of the tutorial were discussed. This allowed tutors to opine their challenges and contributions on how to strengthen tutorials.

In sum, Underhill (2009, p. 95) observes that "...valuing the work tutors do allows them to give their best". So, providing the needed tools for tutorial success was difficult, yet rewarding. When tutors realised that support and training was available, they committed and contributed even more than what their job description required. In this way I and other tutors gained experience, experienced personal growth and found it meaningful where guided effort ultimately revealed success.

6.5. Conclusion

A major finding in this study is that tutors have the potential to influence students to use their devices more for academic use through mobile learning. A blended learning approach where mobile learning along with face-to-face efforts is implemented in tutorials is proven most effective. Furthermore, incorporating technology simultaneously within tutorials and lectures would support mobile learning and would create a balance and synchronised learning that accommodate the students' learning needs. The role of the tutor needs to be restructured and repackaged to accommodate technology to meet students' learning needs. Further recommendations and scope for further study follows next in closing.

Chapter 7. Recommendations, Scope for further research and Limitations

7.1. Recommendations

I propose that mobile learning should be implemented in tutorials and tutoring processes. Mobile learning approaches should be considered, as part of the role of the tutors in HEIs and the needed training for tutors should be provided. There is limited research on tutor processes involving mobile learning in South Africa. For this reason, I recommend that more research should be undertaken in this area. A possible comparative study alongside other HEIs is suggested in South Africa and perhaps Africa. This may help to determine where HEIs still have to develop and/or what South Africa's strengths and weakness are as compared to Africa and the rest of the world. This could have an impact for the 4th Industrial Revolution for students and the institution. Mobile learning approaches could become part of the dimensions of the role of tutors; these could be made part of the tutor policy. There is a need to implement practical training for the 21st Century students learning needs and practical training on the implementation of technological advances such as mobile learning. The training should also include ethical considerations because of online risks such as cyber bullying. There should be stronger emphasis placed on a zero-tolerance policy and cyber bullying should be a behaviour that is emphasised as a code-of-conduct violation. This should be outlined explicitly in learning guides and learning management systems online for both the students and staff. Moreover, emphasis should be made about the sanctions that should also be made explicit.

To assist tutors in understanding issues of discourse I presented various models of mobile learning in the classroom environment. The motive behind these models was for tutors to be prepared to implement mobile learning in tutorials. But this must take into account a proper tutor training programme on how to prepare for the tutorial, how to conduct themselves and with students online and in tutorials, how to give feedback to students and how to handle cases of infraction of the online code of conduct.

7.2. Scholarly Contribution

I present the model that I have developed from the results of this study. The model articulates several factors such as the adapted role of the tutor, mobile learning

implementation, challenges and tensions that must be considered when planning for meaningful tutorials.

7.2.1. A model: strategy and implementation of mobile learning in tutorials

The tutoring system comprises of three fundamental aspects termed the three T's, namely tutor, tutoring and tutorials. These three T's sheds light on the "who, what, where and how" of tutoring. The "who" refers to the tutors and getting to know exactly who a tutor should be, the role he/she should play within the tutorial environment and within virtual environment. The "what" refers to what the tutor does on a day-to-day basis; this emphasises the tasks the tutor incorporates and what tools are available for the tutor to complete these tasks, thus "tutoring". The "where" sheds light on the environment where tutoring takes place. These are the tutorials. When I considered who the tutor is, what tutoring methods will be considered, where the tutorials will be conducted, it lends itself answering the final question: Considering mobile learning potential, how will tutors, tutoring in a specific discipline, conduct successful tutorials?

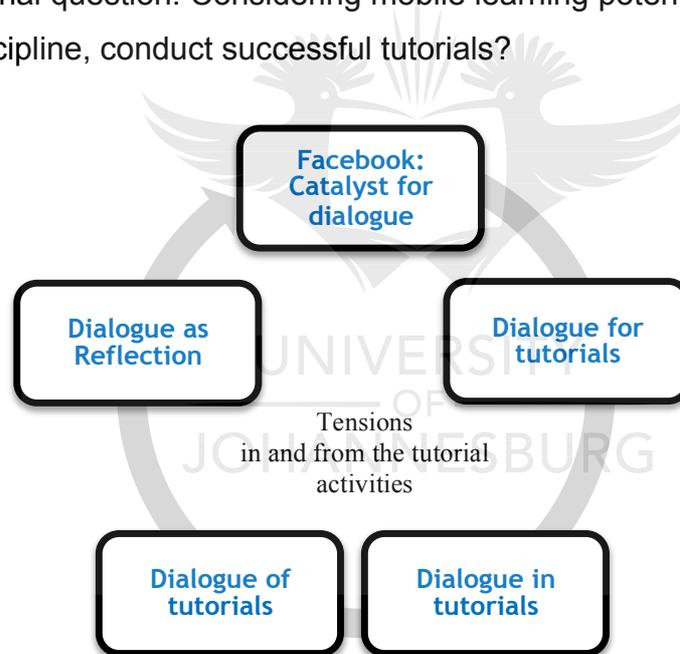


Figure 6.3: A model to enhance tutoring in the 21st Century

7.2.2. The model explained

When I examined the findings in the context of AT, I found that tutors played a vital role in the successful implementation of mobile learning approaches. Mobile learning through the inclusion of a Facebook discussion forum required thorough planning and training in order to be successfully implemented. The Facebook platform was used as the basis for dialogue where tutors initiated discussions online through commenting instruction, riddle,

video or question to sustain, exhaust or lead conversations with the students online. Dialogue was encouraged through the tutor support structure; tutors encouraged student to respond to the initiated activity online. In order for mobile learning to be successfully implemented in tutorials, planning and implementation become the foundation for the development of this model. The model includes four perspectives: dialogue for tutorials, dialogue in tutorials, dialogue of tutorials and dialogue as reflection (see *Figure 6.3*). Before the tutorial mobile learning approach was introduced, students were asked to bring a device to the tutorial. Security online behaviour was discussed in order to ensure that students did not comment or post harmful content. Tutors had administrative rights to the page to delete and report inappropriate behaviour. A closed group on Facebook page was created to control and grant access to students only. After the tutorials had been conducted, time was given to reflect on positive aspects but also on the tensions that were evident.

7.2.2.1. Dialogue for tutorials

Dialogue in tutorials aims to determine how much the students understood from the lecture, what they still needed to know, and how best to get to the desired level of understanding. Dialogue for learning acknowledges that discussions should happen regularly in tutorials, and information based on these discussions can be used to enhance the tutorial process. A mobile learning conscious tutor will encourage online discussions. Tutors initiate conversations with the students in online discussion forum on Facebook.

7.2.2.2. Dialogue in tutorials

Dialogue in tutorials give students the opportunity to form collaborative groups and have meaningful face-to-face discussions to ultimately conduct a successful tutorial. Dialogue in tutorials compliment the online discussions (dialogue for tutorials) and encourage face-to-face learning. The tutors continue online dialogue in the virtual space (Facebook). They connect conversations with collaboration within the face-to-face tutorials. Clarification continues both online and in the tutorials ensuring effective student learning. Collaboration is encouraged to strengthen communities of practice that enrich the dialogues. Tutors stimulate conversation and encourage continuous peer discussion based on clarifying concepts to further collaborative group tutorial activities. Students receive guidance and have structured timed conversations regarding a specific topic that leads to a tutorial activity.

7.2.2.3. Dialogue of tutorials

Dialogue is focused on the evidence interpreted from the tutorial activities in order to summarise learning and to make judgements about the quality of student learning. The information gathered may be used to communicate to the students, lecturers and tutors in order to indicate the students' achievements or lack of achievement. Student dialogue is focused on the results of the tutorial activities and misconceptions or questions are clarified in order to summarise learning. Activities and assessment opportunities take place in the tutorial, and general feedback is given online. Individual and group feedback is given face-to-face during tutorial sessions.

7.2.2.4. Reflect on tensions in and from activities

Reflection time is given to allow both tutors and students to consider the mobile learning approach, give feedback on content and the entire learning experience. Students who are still struggling with an aspect of the content or need additional support arrange one-on-one consultations with the tutors. Tutors are always vigilant to identify tensions and contradictions in the tutorial activities, which typically inhibit the subject from achieving the object of the activity. Therefore, any concerns that are evident before or that arise within the implementation of mobile learning should be discussed and addressed. Two common tensions that arise are power struggles between the tutors and students and the digital divide between lecturers and students.

This tension can be observed prior to an activity and it becomes crucial that the tutors understand that their role is to simplify content as a peer not as a lecturer. The term "peer tutor" is contested because tutors are by definition, "skilled academic achievers which immediately sets them apart from other students" (Underhill, 2009, p. 4). The tutor training that the tutors receives is widened as tutors acquire additional skills. The student often regards tutor as a peer, but the tutor behaviour is often perceived or experienced as that of lecturer (*Figure 6.4*). Tension is evident as the activities that the tutor is trying to implement in the tutorials are unsuccessful. The approach to learning from a students' side is very different from the tutor's one; if dealt with incorrectly relationship conflicts will hinder learning. For the tutor to find a balance in facilitating learning as a peer students can relate with is important for the success of the tutorial.

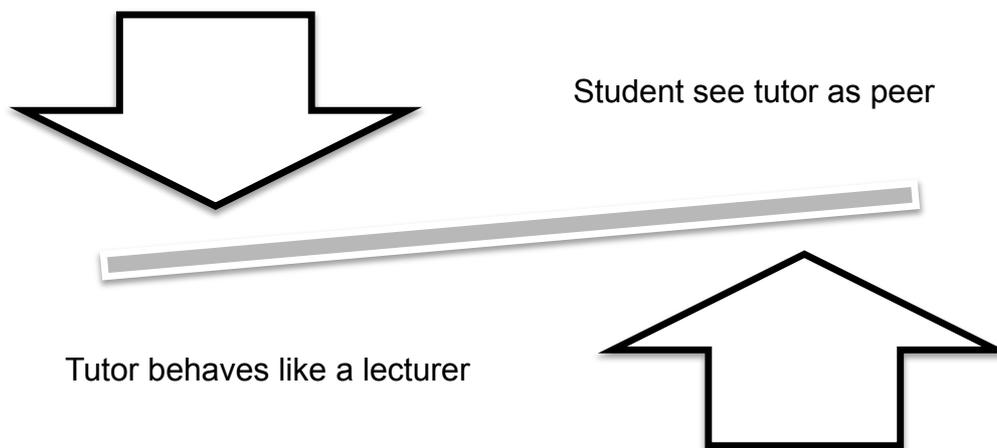


Figure 6.4: Finding a balance between student and tutor relationships (Source, Own)

The digital divide between lecturers and students rose after implementing mobile learning. As students use mobile devices that are relevant in innovative ways of learning, lecture attendance dropped. It is important that the lectures coincide with the tutorials. The lecturer should make efforts to incorporate a technological aspect within lectures for continuation in order to deal with this tension. Students will evidently attend where their learning needs are met. The tutorials become relevant spaces for learning. If the lecturer is unable to find a balance and incorporate technology in the lecture, a tension will be created that will leave a gap in teaching and learning as depicted in *Figure 6.5*.

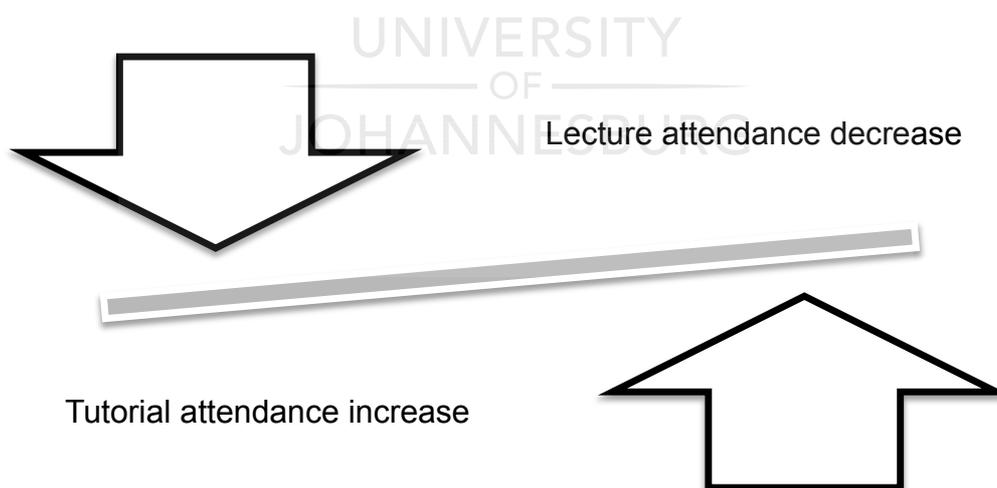


Figure 6.5: Need for balance in using technology in tutorial and in lectures (Source, Own)

7.3. Limitations of the study

The objective of this study was firstly to consider the influence of mobile learning on the tutor, tutoring and the tutorials; secondly, it was to investigate the possibility of tutors

bridging the digital divide between students and lecturers; thirdly, it was to determine the perceptions and experiences of the students about mobile learning; and lastly, it was to examine the contributions of the pedagogical development in HEIs in South Africa by analysing the efficacy of a new medium. Participating students and tutors registered for one module gave insightful contributions to this investigation. The research sample is limited to students and tutors of Teaching Studies 2B (TST20B2) module who volunteered to participate. I recommend repeating this study in more modules.

This study is further limited in the general appreciation of tutor's roles. There is need to consider explicitly tutor's personality traits as a strong contribution to implementing mobile learning. It is also important to note that changes to the role of the tutors in this study may have occurred since undertaking and completing the investigation. Furthermore, the study is focused on the role of the tutor and the tutors' personality traits should be considered as this could lead to a difference in the implementation and outcome of mobile learning. Lastly, grading data of the participants could have been considered to prove if students actually learned.

Ethical considerations such as cyber bullying could not be dealt with, with the respect to in-depth discussions around cyber bullying. For this reason, conversations around cyber bullying and online safety were limited in this study. I suggest that in any online participation, serious measures regarding the risks involved should be thoroughly examined notwithstanding that UJ has a policy on social media. It is important that students are aware of policies as well as safety and risk concerns involving online participation.

7.4. Concluding remarks

The results presented in this study reveal a positive growing interest in mobile learning. Tutors are mostly employed to assist lecturers to reiterate and clarify concepts, and to assist lecturers with various administrative duties. In this study, I aimed to explore tutors' potential to contribute more to learning based on mobile learning in tutorials. It was evident from the data that tutors could positively drive this dynamic method of learning due to peer relations, their own interest, the use of new technologies and the acceptance of mobile learning. The implementation of mobile learning dealt with several challenges that both students and tutors faced. This highlighted tensions and contradictions in the activities of tutoring and tutorials.

The research questions focused on the student's experiences as well as how the tutors were influenced by the inclusion of mobile learning. The results revealed that there is evidence showing change in the ways students learn in the 21st Century. This change should be extended to how tutoring is conducted. Perhaps under explicit observation and supervision from lecturers, senior tutors and the inclusion of tutor's ideas, this approach could have a superior impact, conceivably where mobile learning will be incorporated in lectures as well.

Several students nostalgically appreciated traditional tutoring methods, possibly because a few students did not have mobile devices. These students suggested that traditional methods of tutoring should remain. It is my view that a blended learning tutorial approach would be pedagogically and socially a just consideration for a technological change and for inclusion to embrace mobile learning. The activity systems do support the tutoring model for the 21st Century where there is need to adapt the role of the tutor to remain relevant and to support meaningful tutoring experiences. Given technological advancements, there is no question that mobile learning is the way forward in tutoring and tutorials. This, however, does not imply a wholesale jettison of traditional learning approaches, for they still retain some solid positives.

The successful implementation of mobile learning by using Facebook as a discussion forum requires extensive preparation, training and planning for tutors. A dual partnership between what the lecturer lectures aligned to what and how tutors tutor will ensure successful implementation of mobile learning. I propose on this basis that mobile devices should be incorporated in both the lectures and tutorial spaces. Also, discussion forums should be established in lectures to create a link and balance that continue in tutorials.

Including mobile devices requires proper planning for a successful implementation that prioritises content knowledge that is carefully and correctly discussed. Proper planning allays fears of security risks that arise from online discussion forums. Security measures need to be emphasized to the students, tutors and lecturers in order to minimize or eliminate possible cyber abuse. A strong online administrative presence from tutors is required to monitor the online space to ensure the safety of students. A strong awareness of online safety policies to protect students ought to be part of this project.

In light of the 21st Century students' who are digital natives, there is no need to reinvent the technological wheel for learning purposes. For example, the use of Facebook as an

online discussion remains a relevant and authentic tool because students world over use it anyway. The data revealed that students enjoyed it. It has great potential to encourage the use of devices for learning. The tutor however remains a crucial component of mobile learning because of his or her role. So the support and inclusion of tutors at HEIs is indispensable for mobile learning to succeed. This study shows that tutors remain relevant; if given the opportunity, they can be productive to the benefits of student, lecturers and the institution. Indeed, tutors' influence reaches to the future of mobile learning and remains relevant to the Fourth Industry Revolution in which UJ as an institution wishes to participate.



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APPENDICES

APPENDIX 1: ETHICAL CLEARANCE

From: Robinson, David
Sent: Monday, 30 July, 13:41
Subject: Ethical clearance matters
To: Dasoo, Nazreen

Dear Nazreen

The research for you and Charl Roux has been granted ethical clearance. The number is: **Sem 1 2018-012**.

The research for Robertson has been granted ethical clearance, with minor corrections. The issues for Robertson included: clarify if there is a difference between mobile learning and online learning; consider the need for a co-supervisor from Learning Technologies; the committee members that the title needs to be revised. The number for this research is **Sem 1 2018-013**.

APPENDIX 2: PERMISSION TO CONDUCT RESEARCH

TO: DR N. DASOO

FROM: MED STUDENT – DIANA ROBERTSON

Date: 04 February 2017

Subject: Permission to conduct research

Dear Dr N. Dasoo

I, Diana Robertson, an MEd student in the department of curriculum studies at the University of Johannesburg hereby ask permission to conduct a study with the second year Teaching Studies 2 B (TST20B2) module students and tutors. The investigation is aimed to explain how the role of the tutor is influenced when mobile learning approaches is implemented during tutorials. The investigation further considers the students' experiences when mobile learning activities are introduced within the tutorials. By investigating the participants' perspectives and experiences about the possibilities and challenges of before and after implementing mobile learning approaches within tutorials, I will be able to identify aspects that motivate and hinder effective tutoring and learning.

With your approval, I would like to invite the 5 tutors to participate in the focus group interviews that could last for one to two hours each. I would also like to invite the students to complete questionnaires and online discussion forums.

With the participants' approval, I plan to record data through the use of written notes and a voice recorder. I undertake not to use voice recording if a participant is uncomfortable with that and will instead take written notes. I will only collect data during appointed times and on the university premises. Interviews will be conducted in venues chosen by participants. While I anticipate that two interviews will suffice, I request approval to re-arrange any revisits by appointment if the need arises. I would also like to request approval to consult any school documents that you think could best help me address my research topic.

The findings of this study are for academic purposes. I would be happy to provide you with a copy of my final report should you wish to receive it.

You are welcome to contact me if you have any questions during or after the research. Thank you for your consideration.

Diana Nadine Robertson

0767997575

920402475@student.uj.ac.za



APPENDIX 3: APPROVAL OF RESEARCH PROPOSAL



FACULTY OF EDUCATION

9/21/2018

9 Rivier Street
Eldorado Park
1813
Reference number: 920402475

APPROVAL OF PROPOSAL – MS DN ROBERTSON

Dear Ms DN Robertson

You first registered for the qualification Master of Education (M5ECSQ) in 2017 as a full time student. Your proposal served for notification at the Faculty Higher Degrees Committee meeting on the 21st of February 2018.

The approved title: Mobile learning and its influence on how tutors tutor.
Supervisor: Dr N Dasoo

Should your title change prior to the final submission of the dissertation, be advised that a change of title must serve at the Faculty Higher Degrees Committee.

Regards

Ms B Tshidumo
Faculty Officer: Higher Degrees
belindat@uj.ac.za

UNIVERSITY
OF
JOHANNESBURG

Room: B Ring 313 (APV)

Off Kingway and University Road Auckland Park - PO Box 524 Auckland Park 2006 - +27 11 559 2280

APPENDIX 4: CONSENT FORMS



(For Tutors Participating in this study)

Informed Consent

Project title: **MOBILE LEARNING AND ITS INFLUENCE ON HOW TUTORS TUTOR**

Investigator: Diana Robertson

Date: 10 August 2017

Please mark the appropriate checkboxes. I hereby:

- Agree to be involved in the above research project as a participant.
- I have read the research information sheet pertaining to this research project (or had it read to me) and I understand the nature of the research and my role in it. I have had the opportunity to ask questions about my participation and involvement in this study. I understand that per personal details and any identifying data will be kept strictly confidential. I understand that I may withdraw my consent and participation in this study at any time with no penalty.
- Please allow me to view the report prior to publication. I supply my details below for this purpose.
- Please allow me to view the report after publication. I supply my details below for this purpose.

I would like to retain a copy of this signed document as proof of the contractual agreement between myself and the researcher.

Name: _____

Phone or Cell number: _____

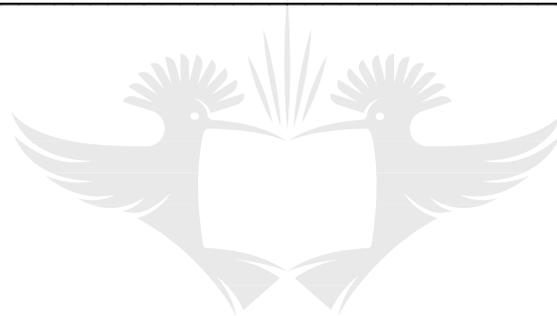
Email: _____

Signature: _____

- I willingly provide my consent/assent for using audio recording of my / the participants contributions.

Signature and date: _____

Signature and date of the person taking the consent:



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MOBILE LEARNING AND ITS INFLUENCE ON HOW TUTORS TUTOR

QUESTIONNAIRE - STUDENTS

Dear Participant

The aim of this research is to investigate the current knowledge of mobile tools in education by looking at the tutor contributions to mobile learning within the University of Johannesburg.

Please complete this questionnaire, which will require about 20 minutes. By completing the questionnaire, you may benefit by reflecting on your experiences. Please consider the following:

- Do not write your name on the questionnaire in order to remain anonymous.
- There is no incorrect answer, your honesty is appreciated.
- After completion please return the questionnaire to the researcher.
- Feedback will be provided once the research is completed.

Thank you for your cooperation.

Ms. D. Robertson

(Researcher)

██████████

Dd. N. Dasoo

(Supervisor)

██████████

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APPENDIX 5: DATA SORTING

<p>Interview lines that answer objectives and research questions</p> <p>MOBILE LEARNING PERCEPTIONS AND EXPERIENCES</p>	
<p>"In terms of my experience... we are expected to run weekly tutorials and consultations. That is what the job requires. The lecturers can change things here and there because of their expectations of the module but its mode or less the same. We will have assignment submissions and marking etc. and these are standard across modules. Some of the modules might have oral presentations as a assignment and some might have written essays but the tutor job or layout is basically the same so to speak" (T5, L38).</p> <p>"I have access to the students while traveling as well as within the tutorial venue" (T5, L63).</p> <p>"...our devices carries so much information and gives us access to applications and emails and important data when we need it instantly. From a student perspective, having a device makes student life easier. From a tutor perspective, having a device make my job easier". (T1, L63).</p> <p>"A device is thin, light weight, fits into my bag conveniently and I literally can't do without my phone. From reminders to note taking, my life is on my phone"(T5, L63).</p> <p>"In terms of my experience... we are expected to run weekly tutorials and consultations. That is what the job requires. The lecturers can change things here and there because of their expectations of the module but its mode or less the same. We will have assignment submissions and marking etc. and these are standard across modules. Some of the modules might have oral presentations as a assignment and some might have written essays but the tutor job or layout is basically the same so to speak" (T5, L38).</p> <p>"I have access to the students while traveling as well as within the tutorial venue" (T5, L63).</p> <p>"...our devices carries so much information and gives us access to applications and emails and important data when we need it instantly. From a student perspective, having a device makes student life easier. From a tutor perspective, having a device make my job easier". (T1, L63).</p>	<p>Tutoring made mobile</p>
<p>"...on a daily basis our devices are relevant for something, why not for learning as well" (T2, L56).</p> <p>"...being able to change the way we tutor to fit without context and our students' needs is really amazing. It means that we are providing a service that is actually appreciated and that is needed. There is nothing worse then standing in front of the students who actually see no need for you to be there except for marking the register. I am there because I have something to offer. If I cater it in a way that they can value then they will see my worth as a tutor. Mobile learning created that opportunity to package our service differently" (T2, L62).</p> <p>"In terms of my experience... we are expected to run weekly tutorials and</p>	<p>Relevance of devices</p>

<p>consultations. That is what the job requires. The lecturers can change things here and there because of their expectations of the module but its mode or less the same. We will have assignment submissions and marking etc. and these are standard across modules. Some of the modules might have oral presentations as a assignment and some might have written essays but the tutor job or layout is basically the same so to speak" (T5, L38).</p>	
<p>"Millennial" (ST, 97) "I am a Millennial student" (T1, L98). "I am Generation Z" (T2, L99). "I am a Millennial" (T3, 100) "Gen Z" (T4, L101). "I am "Generation Z" (T5, L102).</p>	<p>Learning needs of the 21st century student</p>
<p>"... like remember how dead the tutorials used to be. If someone asked a question or had a comment you were lucky... what was amazing is that communication and discussion continued online beyond the tutorial venue" (T2, L186).</p>	<p>Communication is key</p>
<p>"Sometimes if I am lucky, the students will respond here and there..." (T2, 99) "...the frustrating part is that the students don't come prepared and don't want to participate" (T5, L104). "Surely it would be difficult to introduce collaboration and meaningful discussions if the tutors don't bring the conversations in an interesting and relevant manner to the students. We are dealing with a different dynamic in the tutor venues. Maybe how we package the content should change from merely giving the content to presenting it in a way that is interesting and informative to the students" (ST, L120) "We must have done something right because the shift from having students falling asleep to students discussions and collaboration continuing in and out of the tutorials was impressive" (T3, L83). "I think the students saw our teamwork and collaborative efforts and they were feeding off it. Like working in groups within tutorials was easier than I expected because we took a risk to incorporate a social media component that could deviate or derail our tutorial plan. But the students bought into the idea and followed our lead in working together" (T1, L161). "... there was a time the plan slightly changed and we just looked at each other and knew what to do next" (T5, L159).</p>	<p>Communities of practice</p>
<p>Interview lines that answers the objectives and research questions: TUTORING EVOLVED</p>	<p>Codes</p>
<p>"Guys I sucked at feedback. I normally got so overwhelmed with queries that I stopped responding... But with the devices and Facebook discussion forum it was quicker, like a quick chat response. Some questions were easily clarified</p>	<p>Effective Feedback</p>

without an appointment for consultation, it saved time" (T3, L140).	
<p>"I enjoyed the tutorial, it was student focused, I was involved and kept interested the entire time". Another student further responded: "It was an authentic way to capture our attention and more focused on what is relevant to our world and daily lives. My phone plays a big part in my life, making it part of my academics is obviously going to get my attention".</p> <p>"The change in the tutorials is amazing, you can see that the tutors put in a lot of effort to make the activities to be focused on what we would like and what is relevant to our lives. I log on to Facebook literally like every hour, so now I logged on every hour not only for my social life but for my academics to as conversations continued. I appreciated that tutorials were focused on us and who things can be more interesting for us".</p> <p>"... I went to the tutorial hoping students would answer questions or ask questions. Incorporating mobile learning allowed students to feel that it was actually about them".</p>	Student structured
<p>Interview lines that answers the objectives and research questions:</p> <p>DIGITAL DIVIDE</p>	
it is the frustrating part of tutoring, when you stand in front of the students talking to yourself" (T2, L106).	A divide in peer relations
<p>"The lecturer gives the content in a lecture fashion and we tutor now in a new tutoring fashion, students attended where they learn more. Well lectures are limited to PowerPoint slides and a YouTube video here and there but an actual mobile learning approach has not been done in any of the tutorials I tutor" (T2, L25).</p> <p>"...lecturers are not technologically educated, excuse my lack of better explanation there but what I am trying to say is that lecturers are reluctant to incorporate various mobile learning approaches because they don't necessarily know how" (T4, L14).</p>	Tutor as mediator
EFFICACY OF A NEW MEDIUM	Codes
<p>"...maybe students in UJ or our faculty more specifically, respond better to group tutorials where more than one tutor is present. Like lets just think of the shift in atmosphere. Maybe they need and respond better when more hands are on deck" (T1, L240).</p> <p>"We catered for the demand of the type of student we have" (T3, L95).</p> <p>"Being able to change the way we tutor to fit with our context and our students' needs is really amazing. I loved tutoring this module" (T3, 62)</p>	Tutoring for the 21st century

<p>"If we ignore the fact that students are not fully participating in our tutorials and we don't try to find new and relevant ways that would interest them, we are failing at our jobs" (T1, L7).</p> <p>"...maybe we should suggest new ways of doing things in order to be adequate tutors..." (T1, L46).</p> <p>"We are no longer in a primarily pen and paper, you teach I learn or you speak and I listen type of era. I mean students within our tutorials are equipped with so much tools and access to knowledge that the traditional tutoring methods are limiting them instead of supporting them to learn" (T2, L35).</p> <p>"Yes, incorporating a tool we have not use before, to students who have not used them in this manner before was a risk. The outcome unpredictable, but do-able" (T4, L67).</p> <p>"Guys I must confess something: I was a bit sceptical of the Facebook thing during tutorials at first. When the senior tutor spoke about it I was thinking this will never work. I went in because I appreciated the training and curious to see what would happen" (T4, L209).</p> <p>"...the senior tutor was adamant that we plan even for unexpected outcomes and at first I thought this is a waste of time but by giving us all roles to fulfill an proper planning and training made the tutorials successful" (T2, L180).</p> <p>"... our normal routine was prepare your tutorial lesson, walk in the venue and ask for any questions or misconceptions, clarify them if any. Thereafter emphasize the content the lecturer asked you to emphasize, take register and leave, right. And now with the mobile learning approach the senior tutor suggested that we implement within the compulsory tutorials, we all have to work together. So number one, we all have to plan and prepare together. Then two we all walked in the venue together as a team and we collaborated and worked together throughout the sessions. Three, misconceptions and questions were already asked online prior to the tutorial as per the pre-tutorial task posted on the Facebook page. We already responded to those comments prior to even starting the actual tutorial. Four, we emphasised the content as requested by the lecturer in a unique and interesting way and we even took the register on line, how cool is that. Not forgetting the group discussions and task done in the tutorial and the continued culture of having conversations outside of the structured times slot as discussions continued" (T5, L224).</p> <p>"In the previous module that I tutored I was not given room to do anything other than the traditional tutoring way, within this module I could offer my technological skills as an ITC major and it was great because I have more to offer" (T3, L48).</p>	<p>Tutoring Enhanced</p>
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APPENDIX 6: RESEARCH QUESTIONNAIRES

MOBILE LEARNING AND ITS INFLUENCE ON HOW TUTORS TUTOR

PRE- QUESTIONNAIRE: STUDENTS

Year of study _____

1. Are you happy with the way you are being tutored Yes No

Please explain why?

2. What do you think is the role of a tutor during a tutorial?

3. In the traditional tutorial setting, what tutoring methods does a tutor use to conduct a tutorial?

4. Do you own a mobile device (smartphone, iPhone, notebook or tablet)?

Yes No

5. Is your device internet compliant (provided you have data or WIFI access)?

Yes No

6. Do you use your mobile device (cellphone, android, smartphone, iPad, tablet etc) for academic purposes? Yes No

Please explain how you use your mobile device for academic purposes?

7. Do you think a mobile device (cellphone, android. smartphone, iPad, tablet etc) would make tutorials more effective? Yes No

Please express your point of view in your own words.

8. Which social media applications do you make use of most on a daily basis?

- Facebook
- Instagram
- LinkedIn
- Twitter



Do you think the implementation of Facebook through mobile devices implementation would make tutorials more effective?

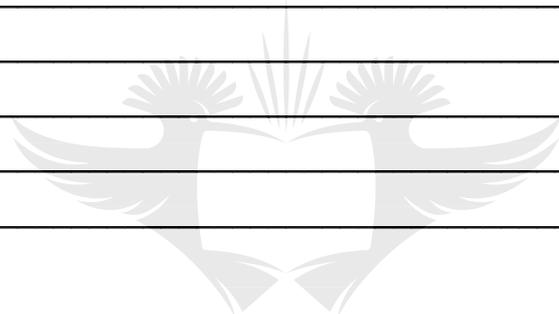
Yes No

Please express your point of view in your own words.

MOBILE LEARNING AND ITS INFLUENCE ON HOW TUTORS TUTOR

POST- QUESTIONNAIRE: STUDENTS

1. How did the implementation of mobile devices influence the tutorials?



2. Did the inclusion of mobile devices influence the role of the tutor?

3. How did you experience the incorporation of Facebook as a discussion forum?

4. Did the mobile learning method(s) introduced by the tutors within the tutorials encourage you to use your device more for academic use?

Thank you for your participation



APPENDIX 7: INTERVIEW SCHEDULE

FOCUS GROUP INTERVIEW SCHEDULE – MOBILE LEARNING AND ITS INFLUENCE ON THE TUTORING PROCESS

*Semi Structured Focus Group Interviews

INTERVIEWS OF TUTORS BEFORE THE IMPLEMENTATION OF MOBILE LEARNING

1. What tutoring experience have you had within the institution?
 2. What is the role of a tutor?
 3. What tutoring methods are you expected to use within tutorials?
 4. What training have you received as a tutor?
-

FOCUS GROUP INTERVIEW SCHEDULE – MOBILE LEARNING AND ITS INFLUENCE ON THE TUTORING PROCESS

*Semi Structured Focus Group Interviews

INTERVIEWS OF TUTORS AFTER THE IMPLEMENTATION OF MOBILE LEARNING

1. How did you incorporate devices within the tutorial?
2. What impact did the inclusion of mobile devices in terms of mobile learning influence the tutorials?
3. Did it impact your role as a tutor?
4. What training have you received to successfully incorporate the mobile learning approach?
5. What is the relevance of mobile learning in your perspective?

APPENDIX 8: INTERVIEW TRANSCRIPTS

FOCUS GROUP INTERVIEWS OF TUTORS BEFORE THE IMPLEMENTATION OF MOBILE LEARNING

Date: 10 August 2017

Time: 12h00

Place: University of Johannesburg, Auckland Park Campus : Tutor room B Ring 3

1 I The purpose of this research study is to examine the current
2 knowledge of mobile tools in education by looking at the tutor
3 contributions to mobile learning within the University of
4 Johannesburg.

5 I I have been a tutor and senior tutor for the past five years within the
6 University of Johannesburg. Tutoring within these years have not
7 really changed much in terms of tutoring methods even though the
8 institution has had several changes in terms of its infrastructure due
9 to technological changes in the world, In order for South Africa, for
10 UJ to keep up with the rest of the world and considering the
11 Industrial Revolution teaching and learning efforts has shifted or
12 adapted to keep up but has the tutoring process shifted?

13 I Can you describe your tutoring experience within the institution?

14 T4 Well as soon as I became a second year I applied for tutoring
15 positions with the Faculty of Education as this is my second year
16 tutoring now.

17 T5 I have been a tutor for 3 years now within the Faculty of Education.

18 T3 As for me this is my third year tutoring also. I have tutored different
19 modules over the 3 years with the faculty. I have gained experience
20 and am now a senior tutor for one of the modules I tutor.

- 21 T2 I am in the second year of tutoring now. I tutor the same modules
22 as when I started tutoring. I am comfortable with the modules I am
23 tutoring in terms of the content and that's why I only tutor those two.
24 I want to become a senior tutor but am still gaining the experience.
- 25 T1 I have been a tutor for 4 years now within Education. In my country
26 Nigeria, I have gained previous tutoring experience there. I am a
27 senior tutor for one other module and tutoring 2 more modules. I
28 must say that tutoring the module might be different in terms of
29 content but the processes is basically the same. We have weekly
30 tutorials where you reemphasize important aspects of the work as
31 T1 instructed by the lecturer and we have one-on-one consultations.
32 The layout of how things are the same.
- 33 T4 Well the structure or layout as you just mentioned by be the same
34 but some modules operate differently. I remember with one of my
35 modules we did not have weekly tutorials, we had compulsory
36 tutorials scheduled within the lecture schedule. We now adapted
37 the weekly tutorials.
- 38 T5 In terms of the layout in my experience it has been the same, I
39 mean we are expected to run weekly tutorials and consultations.
40 That is what the job requires. The lecturers can however change
41 things here and there because of their expectations of the module
42 but its more or less the same. We will have assignment
43 submissions and marking etc. and these are standard across
44 modules. Some of the modules might have oral presentations as a
45 assignment and some might have written essays but the tutor job or
46 layout is basically the same so to speak.
- 47 I Okay, can we suggest that a tutor has a specific role and with each module
the roles are demanded or implemented differently.
- 48 T1 Yes.
- 49 T3 Yah we can say there is standard roles.
- 50 T4 Yes, standard roles that are implemented differently.

51 I Let us define what the role of a tutor is.

52 T2 Okay, I will say our mandate as tutors is to ensure that content is
53 simplified and we do this either through face-to-face consultations
54 or group tutorials.

55 T1 Nice put.

56 T3 In a nutshell.

57 T4 I agree and just to add to that our role as tutor has administrative
58 duties over and above what has just been mentioned. So the
59 primary roles would be to reemphasize content but then we also
60 marks, take registers attend to emails etc.

61 T5 Jah, eish the admin.

62 T1 It's a lot of admin but forms part of our job.

63 T2 The marking is my worst administrative nightmare but the feedback
64 element of it is stressful for me. Like you all know when we mark
65 we are required to give feedback and especially request
66 consultation from students who have not done well.”

67 T1 elaborated: But feedback is also given through the blackboard
68 system where students can view announcements from the lecturer.

69 T5 I am going to be honest, sometimes I am unable to keep up with the
70 marking deadlines because I am trying to give proper feedback on
71 each script and the students end up not getting the feedback and
72 scripts on time but when they get them, they are detailed. I just take
73 a bit long sometimes but I have access to the students while traveling.

74 T4 The more groups you tutor, the harder it is to keep up,

75 T5 Yes uhmm that is why it is important for tutors not to take up more
76 than they can handle. Keeping to deadlines is important and
77 Blackboard is another means of communication but ultimately we
78 are the human contact that the students have access to and its

79 ultimately what we are employed to do.

80 T2 Just to add something totally different, I see the tutor as a
81 middleman, someone who communicates between the lecturer and
82 students. Like the tutor is someone who has been in my shoes and
83 knows both sides of the story.

84 T1 Yes we mediate in terms of clarification of the content. We also
85 mediate on behalf of a student who has had a challenge or difficulty
86 in terms of learning and refer them to other departments such as
87 PsyCAD for example and then inform the lecturer of such cases”.

88 T4 Ultimately our job is to stand in the gap.

89 I Let’s focus on the re-emphasising of content within the tutorial
90 context specifically. What tutoring methods are you expected to use
91 within tutorials?

92 T2 Well I run my individual tutorials a certain way. Like the lecturer has
93 lectured a topic and now I have to re-emphasize the important parts
94 in my tutorials. So what I do is, allow the students to share what
95 they understood from the lecture and ask them to give questions on
96 aspects they find difficulty with. Sometimes if I am lucky the
97 students will respond here and there.

98 T3 Yes, in some modules the students respond differently than others.
99 Sometimes if I am lucky, the students will respond here and there or in the
100 the entire module.

101 T5 All we can do is conduct the tutorial by reemphasizing the important
102 work but the frustrating part is that the students don't come
103 prepared and don't want to participate.

104 T2 The frustrating part is that the students don't come prepared and don't want
105 to participate”

106 T4 Tjo, that is not only frustrating but nerve wrecking because I find
107 myself having prepared for the tutorial but no one is talking to me.

108 So I continue to talk and talk and talk until my tutorial time is up. I
109 have no idea if they heard me, were they asleep or not interested.

110 T1 Yes, sometimes it can be due to many contributing factors, the
111 tutorial time slot might be late in the day and the students are
112 exhausted.

113 T2 Or they might just not be interested.

114 T3 I have been told before that the tutorials is boring.

115 T4 Surely it would be difficult to introduce collaboration and meaningful
116 discussions if the tutors don't bring the conversations in an interesting and
117 relevant manner to the students It is boring for us too.

118 T1 Or is it us not making it interesting enough?

119 I With that being said, what can tutors do differently to make it
120 interesting for students and tutors collectively?

121 T1 Well, I like the purpose of this study, that's why I agreed to
122 participate because the idea that tutors incorporate technology I
123 think could be helpful and interesting. Helpful to combat the
124 problems and to keep the interest.

125 T5 Over my 3 years of tutoring technology has not been a huge part of
126 what we do. Yes we have the Blackboard system where students
127 find the lecture notes, assignment info and marks but its been
128 limited to that. We refer them to Blackboard; we never incorporated
129 any form of technology.

130 T4 Yes, Blackboard and email, that's as far as my technology in tutorials go.

131 T3 Well guys, does WhatsApp groups count, because that's how I
132 communicate with my students. Comes in handy when I might be
133 running late or need to give them content that I didn't get to in the
134 tutorial.

135 T1 I think the question is more what can we do to make the tutorials more interesting.

136 T2 Technology is an interesting enough way; I mean if we can find
137 technological aspects that could make our tutorials more interesting
138 it would be more interesting for us to. I enjoy tutoring but if students
139 done enjoy it, it means that I am failing at my job. Technology is
140 evolving and part of our daily lives, finding an element of it to
141 support tutoring would be great.

142 T4 Yes that would be great.

143 I What type of training have you received as a tutor?

144 T1 No training as such but tutor check-ins.

145 T2 Those tutor check-ins are considered as training sessions

146 T1 Oh really, thanks for the clarity

147 T3 It is basically the same information at every check-in session.

148 T4 We once discussed challenges within the check-in session but I
149 have had no training of any sought.

150 T5 Check-in tutor training discussed the role of tutors

151 T1 Uhm yes and classroom management as well as summarizing

152 T3 There was something about note taking.

153 T4 Yes and feedback.

154 T5 The check-in training is important tutor aspects as a foundation

155 I Just for clarity, have you received any training related to technology
157 example Blackboard, Google classroom, online marking etc.

158 T2 No tech related training would have been nice but there wasn't

159 T1 No technology training as far as I can remember check-in training

- 160 T3 No the tutor check-ins is more discussions not training
- 161 T4 No, the tutor check-ins just included the role of a tutor, uhmmm
161 summarizing, note taking, note making and classroom management
162 as far as I can recall. There was no inclusion of technology.
- 163 T5 Ja no, technology training is needed but no we have not
- 164 T1 Well thank you very much for your time and input today.



FOCUS GROUP INTERVIEWS OF TUTORS AFTER THE IMPLEMENTATION OF MOBILE LEARNING

Date: 30 October 2017

Time: 12h00

Place: University of Johannesburg, Auckland Park Campus : Tutor room B Ring 3

1 I Considering that we have had three compulsory tutorials with the
2 inclusion of mobile learning approaches, what is the relevance of
3 mobile learning within tutoring?

4 T2 I feel that when we exclude devices and mobile learning
5 approaches we losing out on opportunities to influence and
6 change our learning spaces.

7 T1 Yes, if we ignore the fact that students are not fully participating in
8 our tutorials and we don't try new relevant ways that would interest
9 them, we are failing at our jobs.

10 T3 Mobile learning for example is not just relevant for the students but
11 relevant to us as tutors because tutoring the old fashioned way is
12 boring and does not cater sufficiently for the students we have to
13 cater for.

14 T4 Also something I was not really thinking of before but the
15 lecturers are not all technologically educated, excuse my lack of
16 better explanation there but what I am trying to say is that lecturers
17 are reluctant to incorporate various mobile learning approaches
18 because they don't necessarily know how.

19 T5 It was relatively easy for us to pull it off because we are in some
20 instances more clued up than the lecturers.

21 T1 That's why the students could relate to us more throughout these
22 tutorials because we not only brought an element of interest and

23 relevance to their daily lives but in a way that the lecturer could not
24 possibly have done.

25 T2 Well the lectures are limited to PowerPoint slides and a YouTube
26 video here and there but an actual mobile learning approach has
27 not be done in any of the modules I tutor.

28 T4 Even Blackboard has a discussion board option but the lecturers
29 don't incorporate it.

30 T2 Probably because its more work.

31 T4 Or they don't know how.

32 T1 We bridging the gap again.

33 T5 For sure.

34 T4 Yes for sure.

35 T2 We are no longer in a pen and paper, you teach and I learn or you
36 speak and I listen type of environment. I mean we are not in a world
37 with endless possibilities. Students within our tutorials are equipped
38 with so much tools and access to knowledge that the traditional
39 tutoring methods are limiting them instead of supporting them to
40 learning more.

41 T1 True, like I mentioned fore, I am a foreigner from Nigeria and the
42 privileges here in South Africa are ground breaking. The
43 opportunities and possibilities to learning and make learning more
44 interesting is endless. As tutors we are not always given the
45 platform to engage in such ways as we assisting the lecturer as
46 they allow or instructs but maybe we should also suggest new ways
47 of doing things in order to be more adequate tutors.

48 T3 In the previous module that I tutored I was not given room to do
49 anything other then the traditional tutoring way, within this module I
50 could offer my technological skills as an ITC major and it was great
51 because I have more to offer. Being able to change the way we

52 tutor to fit with our context and our students' needs is really
53 amazing. I loved tutoring this module and in this way”.

54 T2 But just to answer the question a bit more regarding the relevance
55 of mobile learning within tutoring, I think it is relevant because on a
56 daily bases our devices are relevant for something, why not for
57 learning as well. I mean we use it to travel, I literally cant travel
58 without a GPS I wouldn't know how to read a map like on paper.
59 We call and text and we do allsorts of things almost every minute.
60 So the relevance for me is obvious, our devices are part of our lives
61 why no make it part of learning too.

62 T5 I personally agree, not only as a tutor but as a student. A device is
63 light weight, fits into my bag conveniently and I cant do
64 without my phone. From reminders to note taking, my life is on my
65 phone.

66 T1 Yes, our devices carries so much information and gives us access
67 to applications and emails and important data when we need it
68 instantly. From a student perspective, having a device makes
69 student life easier and that's why its relevant.

70 T4 Its also relevant because we cant deny the change of atmosphere in the
tutorials. I think I am more positive towards collaboration.

71 T3 The students even thanked me after the tutorials.

72 T5 Yes, as well as positive responses on the Facebook platform.

73 T2 We must have done something right because the shift from having
74 students falling asleep to students discussions and collaboration
75 continuing in and out of the tutorials was impressive.

76 T5 A mobile learning is definitely relevant because it brought about
77 change. A change that was necessary. A refreshing change. It just
78 brought something different to the routine of tutoring and influenced
79 the way the students participated, the way they learn and ultimately
80 the way we tutor.

81 T4 A new way of doing things is refreshing for both the students and
82 the tutors, instead of looking at whose fault it is, we actually found a
83 way to solve the problem. We changed things up a bit, we made it
84 unique and we made it our own.

85 T3 And we catered for the demand of the type of student we have.

86 I Considering that we are all students which generations do we
87 represent? I am a Millennial.

88 T1 I am a Millennial student.

89 T2 I am Generation Z.

90 T5 I am a Millennial.

91 T4 Gen Z

92 T3 Me too, Generation Z

93 I You mentioned the change of atmosphere and the in students
94 attitudes after inclusion of mobile devices. Let's consider the entire
95 mobile learning approach and discuss the impact it had on the
96 tutorials?

97 T1 With the inclusion of mobile learning I found us, the tutors to be
98 better prepared. I mean each tutorial had to be planned out and
99 each tutorial's activity was captivating and well thought out. We
100 tutors moved in between the students and the students seemed to
101 appreciate learning alongside us on a peer level. We were more
102 hands-on and available within and outside of the tutorials
103 online.

103 T2 Yes, it impacted the tutoring process as we know it. Not only was
104 this a joint compulsory tutorial having all the tutors in one venue,
105 working towards one goal but the normal way of tutoring changed.
106 Yes we spoke to them but not from the front of the venue as I
107 normally did. We were actually in between the students, moving
108 and talking to more students. Let me talk for myself when I say I

109 reached more students that some of their faces I had never seen
110 before, yet these are our students for this module.

111 T3 What stood out for me and that had the most impact on was the
112 feedback factor. Guys I sucked at feedback. I normally got so
113 overwhelmed with queries that I just stopped responding and deal
114 with those who make the effort to come see me in consultation. But
115 with the devices included it was quicker, like a quick chat response.
116 Some questions were easily clarified without an appointment for a
117 consultation, it saved time.

118 T4 Well for me the obvious impact in student behaviour and in tutor
119 behaviour was evident. Maybe because its something new and the
120 responses and outcome is unpredictable from either side. I mean
121 the students could not predict what we would do next and we could
122 not predict how they would respond.

123 T1 Mmmm yes the excitement in the tutorial venue was great.

124 T5 I personally have a problem with proper planning for tutorials. I am
125 guilty of re-teaching the content as the lecturer has done because I
126 don't have time to plan. But for these tutorials we were scheduled
127 to do planning together and I didn't want to let you guys down so I
128 was present. And I must say preparing thoroughly and planning for
129 anything that could change or go wrong or be misunderstood was a
130 bit daunting at first but amazing during the tutorial. Like there was a
131 time the plan slightly changed and we just looked at each other and
132 knew what to do next.

133 T1 Just to add to that, I think the students saw our teamwork and
134 collaborative efforts and they were feeding off it. Like working in
135 groups within the tutorials was easier then I anticipated. Because
136 took a risk to incorporate a social media App that could deviate or
137 derail our tutorial plan. But the students bought into the idea and
138 followed our lead in working together.

- 139 T4 Yes, incorporating a tool we have not used before, to students who
140 have not used them before was a risk. The outcome unpredictable
141 but do-able. We all had tasks to do, and we had to do them
142 thoroughly to avoid any comebacks or bad reports to the lecturer.
143 Preparation was a lot of work but once the planning was done, we
144 had less work.
- 145 T3 We literally had to be on your guard at all times during the tutorial.
146 There was no down time. Being vigilant with the inclusion of
147 Facebook was crucial because we didn't want to lose the students
148 attention. We also have to remain professional and in control of the
149 learning experience. The incorporation influenced the way the
150 students learned. Ultimately the way they responded gave us
151 the direction in which we flow with the tutorial.
- 152 T2 To add on the planning factor, the senior tutor was adamant that we
153 plan even for unexpected outcomes and at first I thought this is a
154 waste of time but giving us all roles to fulfil and proper planning and
155 training made the tutorials successful. The device and mobile
156 learning approached impacted the tutorials but the tutors planning
157 and steering it correctly had a big impact in my view.
- 158 T5 The student responses were impacted as well. Like remember how
159 dead the tutorials used to be. If someone asked a question or had a
160 comment you were lucky you know. But with the inclusion of mobile
161 learning students responded. Either on line or in the group
162 discussions and what was amazing was that they actually
163 continued discussions online outside of the tutorial venue.
- 164 T2 Yes we had many students giving their opinion or giving their
165 views and this made the tutorials worthwhile because you could see
166 that they are learning something.
- 167 T1 As per instruction from the Senior tutor, we were expected to
168 respond to comments and misconceptions and control comments
169 that seem to be out of boundaries. Tutors were given admin rights
170 on the Facebook page for security reasons. Students were given a

171 clear guide as to what are acceptable comments to make and the
172 tutors monitored along side the senior tutor ensure that no
173 comments that could harm any student would be tolerated. The
174 administrative rights were give to the tutor to delete such posts
175 immediately and report it. No such comments or harmful responses
176 were made during these tutorial sessions, which was awesome.

177 T3 What was amazing to me was the shy students who never speak
178 had an alternative opportunity to be heard during the tutorials
179 especially because they would never comment out of fear. But the
180 mobile learning approach allows them to speak so to speak.

181 T4 Guys I must confess something. I was a bit sceptical of this
182 Facebook thing during tutorials at first. When the senior tutor spoke
183 about it I was think this will never work. I went with in because I
184 appreciated the training and curious to see what would happen but I
185 had doubts.

186 T1 Luckily those doubts were proven wrong.

187 T4 Yes, luckily.

188 T5 I did have my suspicions too but when I saw how hard we were
189 working in the planning process my feelings towards it changed and
190 our excitement ultimately made me believe it would succeed.

191 I Did it impact your role as a tutor?

192 T3 Yes

193 T1 Yes definitely.

194 T4 Yes, we made it unique, we made it our own to be a perfect fit for students.

195 T2 Yes

196 T5 Yes for sure because our normal routine was prepared your tutorial
197 lesson, walk in the venue as more any questions or
198 misconceptions, clarify them if any. If not emphasizes the content

199 the lecturer asked you to emphasize, take register and leave, right.
200 And now with the mobile learning approach the senior tutor
201 suggested that we implement it within the compulsory tutorials
202 where we all have to work together. So number one, we all have to
203 plan and prepare together. Then two we all walked in the venue
204 together as a team and we collaborated and worked together
205 throughout the sessions. Three, misconceptions and questions
206 were already asked online prior to the tutorial as per the pre-tutorial
207 task posted on the Facebook page. Four, we emphasised the
208 content as requested by the lecturer in a unique and interesting way
209 and we even took the register on line, how cool is that.

210 T1 You emphasised an important point there that I didn't think off.
211 Maybe students in UJ or our faculty more specifically, respond
212 better to group tutorials where more than one tutor is present. Like
213 lets just think of the shift in atmosphere. Maybe they need more
214 hands on deck.

215 T2 True, having more of us at their disposal gives them options, for
216 in case they don't understand or cant relate to me there is another
217 tutor in the venue who can assist.

218 T3 Also when they asked something I was not 100% sure off, I could
219 ask my colleague.

220 T4 Personally I enjoyed having you guys around.

221 T5 Yes, me too and yes our tutoring role was impacted. Our duties to
222 monitor the online space was not part of our duties. Responding
223 online was not part of it. These aspects we added for the safety and
224 security but also because it was necessary to change things up a
225 bit to accommodate our students.

226 I What training have you received to successfully incorporate the
227 mobile learning approach?

228 T1 We had Blackboard training and also attended online discussion
229 and Facebook monitoring workshops.

- 230 T3 Yes marking on blackboard was clarified.
- 231 T4 And security aspects student safety online was emphasized.
- 232 T2 I am appreciative of the awareness and training regarding cyber bullying and
233 how we as administrators of the page can be vigilant online.
- 234 T5 I was not even familiar with this term and these dangers, but now that I know
235 I remain cautious.
- 236 I Are there any negative aspects that you would like to mention?
- 237 T1 Not much really but I would like to just mention that with the successful
238 implementation we see a different problem. I think we substituted one problem
239 for another. ...The lecture attendance drops”.
- 240 T3 Yes, for future tutorials we need to plan with the lecturer to manage the
241 attendance.
- 242 T4 I fully agree.
- 243 I Well thank you for this insightful focus group interview.



APPENDIX 9: FACEBOOK COMMENTS LOG1

FACEBOOK COMMENT LOG 1

- Awesome!!!
- #awesome
- Tutorial was perfect.
- Exciting!!
- La..le...li...lo...lu...#LIT
- Stop it I like it.
- If there was a dancing reaction I would have used it.
- Love it. Interactive learning.
- It was a fun lesson
- We should have something like this even next term it promotes participation
- Fun, different and gave us a platform for open statements. Not hypocritical like other courses, you actually taught us about authentic assessment in an authentic way
- Nice way of assessing our understanding of authentic assessment, didn't feel like a test of some sort, learned about peers too
- Shuuuuu
- I guess
- Great tutorial it was... Thank you
- Shout out to Diana. Didn't always feel like I can't participate. Good interacting with you. You're a welcoming person ☐
- it was an informative lesson

- Very engaging. Interactive learning with peers was meaningful. Sharing of ideas and knowledge was eye opening. Thanks to the team
- Awe it's was nxa
- The tutorial was awesome and really authentic.. i like it for the fact that it was student -structured
- It was lite, i lyk it 4 da pirates
- Interesting if real life school can be like this learning will be more fun at the same time very educational # aunthenticassesment forward
- It was Niiiyce ♡♡♡♡.. ☆☆☆☆
- It was a great tutorial, totally different from what we used to. So it was perfect.
- The tutorial was enjoyable and very authentic. I gained a lot today that will prepare me for an exam. Thank you.
- It was fun and interesting because we got a chance to interact with our fellow mates...we should do this more often♡♡♡♡
- The heightened interaction between learners, content and learning tools depicted what a normal lesson should look like. I think we all take tips from this to use in our own classes.
- It was fun♥ and interesting
- The lesson was interesting. I bet all learners felt like we could do it everyday
- At first I was skeptical about having to do activities through social media since I'm hardly on them. However, this was a fun a new way of using everyday tools and apps such as Facebook to make assessments fun.
- #SlayDianaSlay
- Dope
- 100%“
- Looooooovvvvvved it. Interactive learning”.
- “We should have something like this event next term it promotes participation”.
- “Fun and different. Gave us a platform for open statements...”



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APPENDIX 10: CONFERENCE ATTENDANCE



PART A:

CONFIDENTIAL COMMENTS FOR AUTHORS ONLY

Paper ID: 128

Paper Title: *M-learning and its influence on the tutoring process*

Recommendation: **Accepted without changes**

PART B: COMMENTS FOR THE ATTENTION OF THE AUTHOR

1. **Appropriateness of the Topic:** Suitable
2. **Conceptual Adequacy:** Good
3. **Technical Adequacy:** Modest
4. **Clarity of Presentation:** Good
5. **Significance of Contribution to the Field:** Good

Additional Comment/s

- *N/a*

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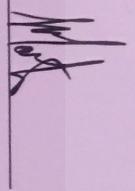


PRESENTED AND PUBLISHED
by

Ms. Diana Nadine Robertson

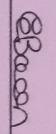
"M-learning and its influence on the tutoring process"



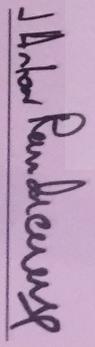


Date: 24 – 25 September 2018
Venue: Singapore

Prof. the Hon. Dr. Stephen Martin
Chairman, Board of Governors, GSTF



Professor Liz Bacon
Deputy Vice-Chancellor (Academic)



Dr. Anton Ravindran Ceng (UK), FRCS
President, GSTF



South African Education Research Association

Promoting and supporting research in education

Website: www.saera.co.za

SAERA 2018 CONFERENCE

21 July 2018

Dear Ms DN Robertson and Dr N Dasoo

We are pleased to inform you that your abstract, SAERA2018-117 (Mobile Learning: Tutors authentically using Facebook as a discussion forum) has been accepted for presentation at the Annual Conference of SAERA at the Saint George Hotel and Conference Centre, Pretoria.

Reviewer remarks:

Thank you for your submission! We look forward to seeing you at SAERA 2018!

You are invited to attend the conference and present the paper. A registration form is attached.

Please take note:

Due date for registration: 6 September 2018

Due date for payment and proof of payment: 28 September 2018

Delegates need to submit proof of payment on or before the due date to ensure attendance/presentation at the conference.

Regards

Ms Petra Lawson
Conference Administrator (SAERA 2018)
E-mail: conferencepl@gmail.com
Fax to mail: 27 (0) 86 541 1173
Cell: 27 (0) 83 231 6538



SOUTH AFRICAN EDUCATION RESEARCH ASSOCIATION

Certificate of Participation

This is to certify that

MS D ROBERTSON

Participated at the

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6TH SAERA CONFERENCE (2018)

22 – 24 October 2018

Hosted by

The Faculty of Education, North-West University