



**The utilization of WhatsApp for teaching and learning in an initial teacher
preparation programme at a University of Technology**

by

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DECLARATION

I, Nkosinomusa Mabaso, declare that this dissertation entitled 'WhatsApp utilisation as a teaching and learning at an initial teacher preparation programme at the University of Technology' is my own work and that it has not been submitted for any degree at any other university. All the sources I have used or quoted have been indicated and acknowledged by means of a complete reference.

Nkosi

Signed.....

Nkosinomusa Mabaso (212035460)

Date: March 2021

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ABSTRACT

The thesis discusses utilization of WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology. This study was guided by one main research question: “How do lecturers and students utilise WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology in South Africa”? The three sub-research questions are: (i). How is WhatsApp used by lecturers and students as a communication tool in an initial teacher preparation programme at a University of Technology in South Africa? (ii). How is WhatsApp used by lecturers and students as an educational tool in an initial teacher preparation programme at a University of Technology in South Africa? and (iii). Why do students prefer using WhatsApp to Blackboard? The study employed Garrison, Anderson and Archer’s (2010) Community of Inquiry (CoI) as a theoretical framework. An interpretative paradigm guided the design of this qualitative case study. Sixteen students and two lecturers were purposively selected participants, involved at the University of Technology, the site of this research project. Data collection tools used included: semi-structured interviews, focus group interviews and documentary data (WhatsApp screenshots); all these data were inductively and deductively analysed. To answer the main and sub-research questions, several themes emerged which explained how WhatsApp was utilised as a teaching and learning tool. These benefits included using WhatsApp as an affordable tool for communication, information sharing and reminding. Collaborative learning, developing English skills and facilitating distance learning were the greatest advantages of using this application in education. WhatsApp proved to be an important device when it was utilised during the strikes by lecturers and students as a teaching and learning tool. There were some limitations of WhatsApp as a teaching and learning tool which included: lack of internet access, lack of data and distractions. Students revealed that they preferred WhatsApp to Blackboard due to the lack of training on how to use Blackboard, shortages of computer labs and poor service from the Information Communication Technology (ICT) Department.

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LIST OF ABBREVIATIONS

CAPS	Curriculum and Assessment Policy Statement
CoI	Community of Inquiry
DoBE	Department of Basic Education
FET	Further Education and Training
GPS	Global Positioning System
HEIs	Higher Education Institutions
ICT	Information Communication Technology
IM	Instant Messaging
ISP	Intermediate and Senior Phase
ISPFTED	Integrated Strategic Planning Framework for Teacher Education and Development
IT	Information Technology
LMS	Learning Management System
LoI	Language of Instruction
MED	Master of Education
NDP	National Development Plan
PDF	Portable Document Format
PGCE	Post Graduate Certificate in Education
PHD:	Doctor of Philosophy
SDG	The Sustainable Development Goals
SMS's	Short Message Services
UK	United Kingdom
UoT	University of Technology
WCED	Western Department of Education
WDR	World Development Report

CHAPTER 1

INTRODUCTION

1.1. INTRODUCTION

Use of WhatsApp has become ubiquitous at many Higher Education Institutions (HEIs) despite the fact that the social media tool is criticised for not being able to create meaningful learning experiences for students. This chapter sets out the background issues involved. This is followed by a discussion of the importance of the study. The context of the study and the approach of the study are presented along with the purpose, research title and main research questions and the sub-questions. Main terms used in this study are clarified and limitations and assumptions explained. The chapter ends with a presentation of how the thesis is organised and a succinct conclusion.

The researcher is currently employed at a special school for deaf learners where he uses sign language and WhatsApp as educational tools to support his teaching. In 2012 till today, when he was appointed as a tourism educator, he opened a WhatsApp group chat with his Grade 10, 11 and 12 tourism deaf learners at this school. The purpose of using this online platform is to keep learners informed about the subject 'Tourism'. This WhatsApp group plays a vital role as a supporting tool where he uploads work such as videos, pictures, links to educational information and answers students' questions on this WhatsApp chat group. This platform has been welcomed by the researcher's deaf learners: they are supported in their learning process. This experience of using WhatsApp as a teaching and learning tool motivated him to conduct this own research in order to understand more about the ways to utilise WhatsApp in order to promote teaching and learning, and to find alternative ways to improve his own teaching using this WhatsApp platform.

1.2. ORIGIN AND BACKGROUND OF THE STUDY

According to the World Development Report (2018:146) "Technological interventions increase learning, but only if they enhance the teacher-learner relationship." An increase in information technology demands an equal increase in the number of highly-trained graduates who are able to utilise technology. Students need to be adequately prepared and empowered with technology while they are still at university. One of the most important benefits of using technology is to "to keep learners from falling behind

to the point where they cannot catch up, target teaching to the level of the student” (World Development Report, 2018:22). The Sustainable Development Goals [SDG] (2019:114), particularly Goal 4, “aims to significantly increase access to information and communications technology and strive to provide universal and affordable access to the internet in least developed countries by 2020.” This SDG (2019) document supports technology, research and innovation in developing countries, to improve the use of supporting technology, in particular information and communications technology, and to promote the empowerment of women. The National Development Plan [NDP] (2030) strives to develop the quality of teaching and learning in higher institutions.

In South Africa, the DoBE Action Plan to 2019, the Integrated Strategic Planning Framework for Teacher Education and Development (ISPFTED) is committed to purchasing digital technologies to ensure that all educators have advanced technology skills so that they can teach learners by using various digital means available (DoBE, 2019). The potential for using WhatsApp as an instant messaging tool is pertinent in resource-poor contexts because it is currently one of the most commonly used applications on mobile phones and computers. WhatsApp contributes to education and offers several advantages such as cost effectiveness and student participation (Cetinkaya, 2017; Willemse, 2015).

WhatsApp is one form of social media used by both students and lecturers to facilitate teaching and learning in higher education despite debates around social media as a tool for teaching and learning in higher education (Mwakapina, Mhandeni & Nyinond, 2016; Josh & Bansal, 2014). WhatsApp is welcomed with mixed feelings. Some scholars view it as a suitable teaching and learning tool (Mwakapina, Mhandeni & Nyinond, 2016; Josh & Bansal, 2014). Others criticise WhatsApp for being disruptive and not suitable to allow students to have deep and meaningful academic discussions; it is mainly viewed as a social media that is ideal for communication only (Mwakapina, Mhandeni & Nyinondi, 2016).

At the UoT where this study was conducted, the vision is “to be at the heart of technology education and innovation in Africa” (UoT Vision, 2020) and the Faculty of Education is the biggest teacher education provider in the province (Pellissier, 2019). Within this Faculty, some academics were, and are, still utilising WhatsApp explicitly

as the main teaching tool in addition to the Learning Management System (LMS) called Blackboard; despite the fact that the institution is emphatic on utilising Blackboard only. Academics and students at a university which envisions being at the “heart of technology and innovation” in the continent may be expected to use a LMS to facilitate blended learning initiatives. But some academics are exclusively utilising WhatsApp as a teaching and learning tool. The utilisation of WhatsApp as a teaching tool only at this initial teacher preparation programme contrasts with the institution’s blended learning policy and Goal 16 of the Action Plan (2019) of the Department of Education which seeks to let all trainee and in-service teachers gain comprehensive subject knowledge and good computer literacy skills (DoBE, 2019). A current issue in the university’s discourse is how to prepare students for their future jobs and careers through the use of technology. Lecturers, however, cannot expect students to be technologically advanced and be conversant with various types of technologies which are currently available in workplaces (schools) if they are limited to learning using WhatsApp only.

1.3 STATEMENT OF THE PROBLEM

WhatsApp is criticised for not being able to allow students to have deep and meaningful academic discussions as it is mainly viewed as a social media that is ideal for communication (Mwakapina et al., 2016; Nuraeni & Nurmalia, 2020; Cetinkaya, 2017). Many studies have emphasised the challenges faced when WhatsApp is used for teaching and learning, which discourages lecturers and students from using it as a teaching and learning tool. For example, Nuraeni and Nurmalia (2020) revealed that during the utilisation of WhatsApp for educational purposes, some students serve as silent readers and they do not collaborate in the discussion with their classmates and lecturers. Unrelated messages that are posted by students on the WhatsApp group chat for learning, cause distraction to students and make them lose focus (Mwakapina et al., 2016). As students come from different backgrounds, not all of them can afford to buy data bundles in order to utilise WhatsApp for learning purposes as it is costly and requires them to have access to the internet (Cetinkaya, 2017). Formal suitable teaching and learning cannot take place on WhatsApp as students can exit group chats anytime, and there is a lack of student’s discipline and attention to information provided by their lecturers (Nuraeni & Nurmalia, 2020).

Despite these criticisms and disadvantages of using WhatsApp for teaching and learning, students and lecturers at a UoT in South Africa are utilising it to promote teaching and learning. The importance of WhatsApp as a teaching and learning tool was evidenced during the global COVID-19 pandemic where this tool played an essential role in teaching and learning at schools and universities. According to Motala and Menon (2020) at universities in Asia and Africa, postgraduate supervision continued online through the use of WhatsApp and other technologies. Postgraduate supervision was not interrupted during the pandemic because of WhatsApp. Lecturers were using WhatsApp extensively with their students during this time. They reported that students who were in rural areas, had to climb to the top of mountains to receive connection to WhatsApp so they could access resources such as images for assignments to meet submission deadlines (Motala & Menon, 2020).

Some lecturers used WhatsApp for teaching and learning. Mistar and Embi (2016) state that utilisation of WhatsApp among students and lecturers presents many positive interactions for learning. Cetinkaya (2017) concurs that WhatsApp helps students perform academically. Cetinkaya (2017) argues that WhatsApp should not be disregarded because it promotes learning.

Currently, billions of people utilise Instant Messaging (IM) applications, referred to colloquially as 'apps' to communicate; for example, WhatsApp (Fiscione, Pizzolante, Castiglione & Palmieri, 2020). Technological applications which include social media are being deployed to enhance teaching and learning in most 21st century universities (Rambe & Bere, 2013). Internationally and nationally, there are many policies and working documents that encourage the use of different technologies such as WhatsApp to facilitate teaching and learning (DoBE, 2019; UoT Vision, 2020; NDP, 2030; World Development Report, 2018, and SDG, 2019).

Despite the benefits highlighted by Mistar and Embi (2016), Cetinkaya (2017) and Motala and Menon (2020) the availability and accessibility of policy documents that encourage the use of WhatsApp, many universities are reluctant to adopt and adapt it for teaching and learning. It is within this context, that the researcher seeks to explore ways in which lectures and students utilise WhatsApp for teaching and learning in an initial teacher preparation programme at a UoT, in South Africa.

1.3. IMPORTANCE OF THE STUDY

This study adds to the debate on WhatsApp utilization for teaching and learning. It presents pedagogical insights about using WhatsApp by many students and staff to facilitate learning and teaching. The findings of this study will be communicated to the HEI where this study was conducted and other HEIs, so that they are informed about the importance of using WhatsApp for teaching and learning. This information enables teacher educators to adopt and adapt WhatsApp as a teaching and learning tool.

Several studies (Nuuyoma, Mhlope & Chihururu, 2020; Rambe, Chipunza & Ng'ambi, 2020; Berewot & Fibra, 2020; Napratilora, Lisa & Bangsawan, 2020) have been conducted on utilising WhatsApp as a teaching and learning tool. Few of these studies, however, have focused on this topic of using WhatsApp as teaching and learning tool by lecturers and students explicitly at a teacher preparation programme in UoT. This study hopes to contribute new knowledge and skills of using WhatsApp as both a teaching and a learning tool in higher education. There is a dearth of research on the utilisation of WhatsApp in an initial teacher preparation programme to facilitate teaching and learning (Willemse; 2015; Sivakumar, 2016; Rosenberg, & Asterhan, 2018; Rambe, Chipunza & Ng'ambi, 2020). A lack of knowledge in this area is what this study seeks to address.

1.4. CONTEXT OF THE STUDY

This study was conducted at a University of Technology in the Western Cape, South Africa. This UoT has six faculties and this study was conducted at two campuses within the Faculty of Education. The university encourages lecturers to teach using technology: it envisions being the leading technology hub in Africa (Vision, 2020). This institution is located in an urban area.

1.5. APPROACH TO THIS STUDY

A qualitative case-study approach guided this study. In order for this qualitative case study to take place, the researcher met his supervisors and explained the purpose of his proposed study, the reasons for selecting this UoT, the possible participants, including students and lecturers. He explained the importance of the study and how it could contribute to research as well as teaching and learning pedagogical approaches used in schools and universities. After a constructive discussion with the supervisors, they decided to continue with the study. Once the proposal was accepted and the

necessary university ethics forms were collected, the researcher met with possible lecturers. Eventually two agreed to participate in this study and they were both given consent forms to sign. The supervisors provided an opportunity for the researcher to talk to the students about the study, where he was given a chance to explain in more depth the details of the research project. The students who agreed to participate in this study were given a consent form to sign as proof of their willingness to participate. He took their details (phone numbers and emails) in order to arrange dates, times, and venues for data collection.

Interviews with both lecturers took place in their offices after classes around 17:00. The advantage of conducting interviews in their offices was that there were no distractions. This was a suitable time for both interviewee and interviewer as it was after work. In order to contact the students, WhatsApp was used as a communication platform to inform the students about the meeting venues, time and date. The two student focus group interviews took place at the UoT in their classrooms. Unreachable students were contacted via WhatsApp, and Short Message Service (SMS's) were sent to them. Each focus group discussion took an hour, which made a total of four hours for collecting data from students and lecturers over four days. Voice recordings were used to save the data during the interviews with both the lecturers and students. This allowed the researcher to think critically about using the probing questions he had planned, instead of focusing on accurately writing down participant data during the interview.

1.6. PURPOSE OF THE RESEARCH

The purpose of this study is to explore the ways in which lectures and students utilise WhatsApp for teaching and learning in an initial teacher preparation programme at a UoT, in South Africa. This study will contribute to knowledge and the utilising of WhatsApp as a teaching and learning tool to both students and lectures at different levels of education including universities, colleges, high and primary schools. In attempting to identify how students and lecturers explore the use of WhatsApp, this study is influenced by Willems (2015) who explicitly stated that WhatsApp has been found to be helpful for learning because it promotes student participation in both face-to-face and distant contexts between students and lecturers. Guo, France and Cowley

(2020) praised the ability of WhatsApp to encourage student participation; especially those who are not in favour of classroom learning.

1.7. THE RESEARCH TITLE

The utilization of WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology.

1.8. THE MAIN RESEARCH QUESTION AND THE SUB-QUESTIONS

The main research question is: How do lecturers and students utilise WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology in South Africa?

The sub-research questions are:

- How is WhatsApp used by lecturers and students as a communication tool in an initial teacher preparation programme at a University of Technology in South Africa?
- How is WhatsApp used by lecturers and students as an educational tool in an initial teacher preparation programme at a University of Technology in South Africa?
- Why do students prefer using WhatsApp to Blackboard?
- What are the challenges of using WhatsApp in an initial teacher preparation programme at a University of Technology in South Africa?

1.9. CLARIFICATION OF TERMS

The following Seven terms within this study will now be clarified: teaching and learning, Learning Management Systems (LMSs), collaboration, WhatsApp platform, smartphones, social cohesion and social media.

1.9.1. Teaching and learning

Learning is results in a relatively lasting change, usually brought about purposely (Sequeira, 2012) when we enrol at school or attend a course, read or search through a book we set to learn. Other learning can take place without planning, for example by experience. Teaching is a set of events, which happens outside the learners designed

to support internal process of learning (Sequeira, 2012). Teaching (Instruction) is outside the learner. Learning is internal to learners (Sequeira, 2012). Eren and Tekinarslan (2012) stated that the terms of teaching and learning are so broad they encompass various fundamentals of the teaching and learning procedures such as educators, learning, assessment, and instructional material.

1.9.2. Learning Management Systems (LMSs)

Learning Management Systems (LMSs) are “web-based software platforms that provide an interactive online learning environment and automate the administration, organization, delivery, and reporting of educational content and learner outcomes” (Turnbull, Chugh & Luck, 2019: 1). A variety of LMSs are utilised in thousands of universities in the United States of America and worldwide for educational purposes. At the selected UoT where this study took place, Blackboard was used.

1.9.3. Collaboration

Collaboration is a process in which entities share information, resources and responsibilities to jointly plan, implement and evaluate a programme of activities to achieve a common goal (Matos & Afsarmanesh, 2008). This concept is derived from the Latin “collaborare” meaning “to work together” and can be seen as a process of shared creation, thus a process through which a group of entities enhance the capabilities of each other (Matos & Afsarmanesh, 2008).

1.9.4. WhatsApp platform

Aburezeq and Ishtaiwa (2013) define the WhatsApp platform as a cross-platform mobile messaging app that permits users to chat in real time without having to pay for short message service (SMS). According to Sivakumar (2016), the application (WhatsApp) is usually used on certain cell phones and computers. Akpan and Ezinne (2017:43) state that “WhatsApp application is specially designed for educational activities which enhance communication, creativity, critical thinking and problem-solving skills among learners. WhatsApp is a collaborative tool for learning among students.”

1.9.5. Smartphones

Bard, Joseph and van Helmond (2019) explain that smartphones are mobile phones that have functions that are similar to a computer, they have internet access,

touchscreen interface and a system that can download apps. It permits users to keep photos, personal information (Miakotko, 2017). Smartphones offer teachers and students a chance to collect, assess, and process knowledge and information inside and outside classrooms. They foster learning, collaboration, and communication that is suitable to diverse learners and individual needs (Jabali, Saeedi, Shbeitah & Ayyoub, 2019).

1.9.6. Social media

Social media takes the form of online tools that allows connectivity, communication and teamwork. Today, social media is becoming an essential part of most utilisers' individual lives via smartphones (Zincir, 2017). Kayumovich (2020) asserts that social media is a service based on the notion of Web 2.0, which permits operators to create content and to share it based on their social cohesion. Educators are turning to social media for education seasons such as sharing resources and to collaborate with their colleagues and learners (Kayumovich, 2020).

1.9.7. Social Cohesion

Social cohesion is a term which is enjoying an ever increasing popularity (Mekoa & Busari, 2018). The concept, social cohesion has been used to signify the existence or presence of social ties that unify society together and help to foster an integrated and a strong community (Mekoa & Busari, 2018).

1.10. LIMITATIONS OF THE STUDY

This study is limited specifically to one UoT, in South Africa. The researcher had an option to select other Higher Education Institutions (HEI's) such as universities and colleges or even high and primary schools, however due to limited time and travelling costs only one UoT was selected as it satisfactorily met the criteria relevant to the subject under investigation.

The study was limited to investigating only the utilisation of WhatsApp, while globally there are several other teaching and learning tools, that could have been used to conduct the investigation, for example Facebook and Blackboard. The focus of this study was based on teaching and learning activities, while many other foci could have been investigated such as assessment and late coming.

The sample was limited to only lectures and students to participate in this study but there are many role players at the UoT where this study was conducted who are directly and indirectly responsible in ensuring the successful facilitation of teaching and learning such as Heads of Departments and Deans of Faculty. The sample of this study was purposefully small; only 18 participants were selected out of thousands of students and lecturers at this particular UoT. The findings of this study cannot be generalized or speculated to the entire UoT lecturers and students.

1.11. ASSUMPTIONS OF THE STUDY

The researcher assumed that the participants would willingly agree to participate in this research project. He assumed, while he was developing the research questions on the data collection instruments, that the students and lecturers would be able to provide narrated responses; that they would be able to truthfully and ethically answer the interviews and focus group interview questions. The researcher assumed that the students and the lecturers experienced advantages and disadvantages while utilising the social media, WhatsApp, as a teaching and learning tool. The assumption was that the students face more disadvantages compared to the lecturers when utilising WhatsApp as an educational tool. The researcher assumed that WhatsApp is a popular teaching and learning app used by both students and lecturers and can positively contribute to the success of students and make facilitating teaching easy for lecturers.

1.12. ORGANIZATION OF THE THESIS

This thesis concerns utilization of WhatsApp for teaching and learning in an initial teacher preparation programme at a UoT and consists of the following five chapters:

Chapter 1: Introduction to the research

Chapter 1 provides a comprehensive introduction and background to the study. The chapter provides the importance and context of the study. The purpose and goals, critical research questions guiding the study are explained in detail. Clarification of terms, the significance of the research, the limitations and assumptions of the study are provided.

Chapter 2: Literature review and theoretical framework

Chapter 2 reviews national and international literature related to the utilization of WhatsApp for teaching and learning in education. Scholars have different views about the use of WhatsApp in higher education some see it as a good platform while others see it as not suitable to be used in education. This chapter provides comprehensive information about the theoretical framework underpinning this investigation.

Chapter 3: Research Design and Methodology

Chapter 3 explains the research approach, design and methods that were used to conduct this investigation.

Chapter 4: Results and Discussion

This chapter presents the findings of this study and discussions using the theoretical framework and literature related to this study as presented in Chapter 2.

Chapter 5: Conclusion and Recommendation

This chapter contains the summary of the key findings, it suggests some recommendations, and offers future investigations and concludes the study.

CHAPTER 2

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. INTRODUCTION

According to Anthony, Onwuegbuzie and Frels (2016: 4) a “Literature review is a type of report that simply describes prior studies. It is the most effective way of becoming familiar with the previous findings but also with the research methodology used in previous research.” This chapter reviews national and international literature related to this study. Through the review of different types of literature, the author became familiar with discussions concerned with using WhatsApp for teaching and learning purposes.

This chapter begins by describing the theoretical framework, the Community of Inquiry (CoI) which underpins this study. This literature review introduces the concept of WhatsApp. This is followed by a discussion of the use of WhatsApp for teaching and learning; students’ and lecturers’ perceptions of using WhatsApp and Blackboard as a teaching and learning tool. This chapter concludes with a discussion of the problems encountered by students and lecturers when using WhatsApp. Finally, a chapter summary describes pertinent issues which emerged from reviewing literature.

2.2. THEORETICAL FRAMEWORK

This study draws upon the concept of Community of Inquiry (CoI) as formulated by Garrison, Anderson and Archer (2010) to form a theoretical framework within which to discuss the topic selected. The origin of this theory can be traced back to the work of Dewey described by Prawat (2000) and is consistent with a constructivist approach to learning (Garrison & Arbaugh, 2007). The theory of CoI in an online context assumes that learning occurs within a community through the interaction of three core elements: i) cognitive presence, ii) social presence, and iii) teaching presence (Garrison et al., 2010). Collaborative constructivism is the theoretical base of the CoI framework used in this thesis. It is grounded on profound and meaningful methods for learning (Cleveland-Innes & Emes, 2005). Figure 2.1 shows the categories of the three elements and the indicators of CoI (Garrison, 2011).

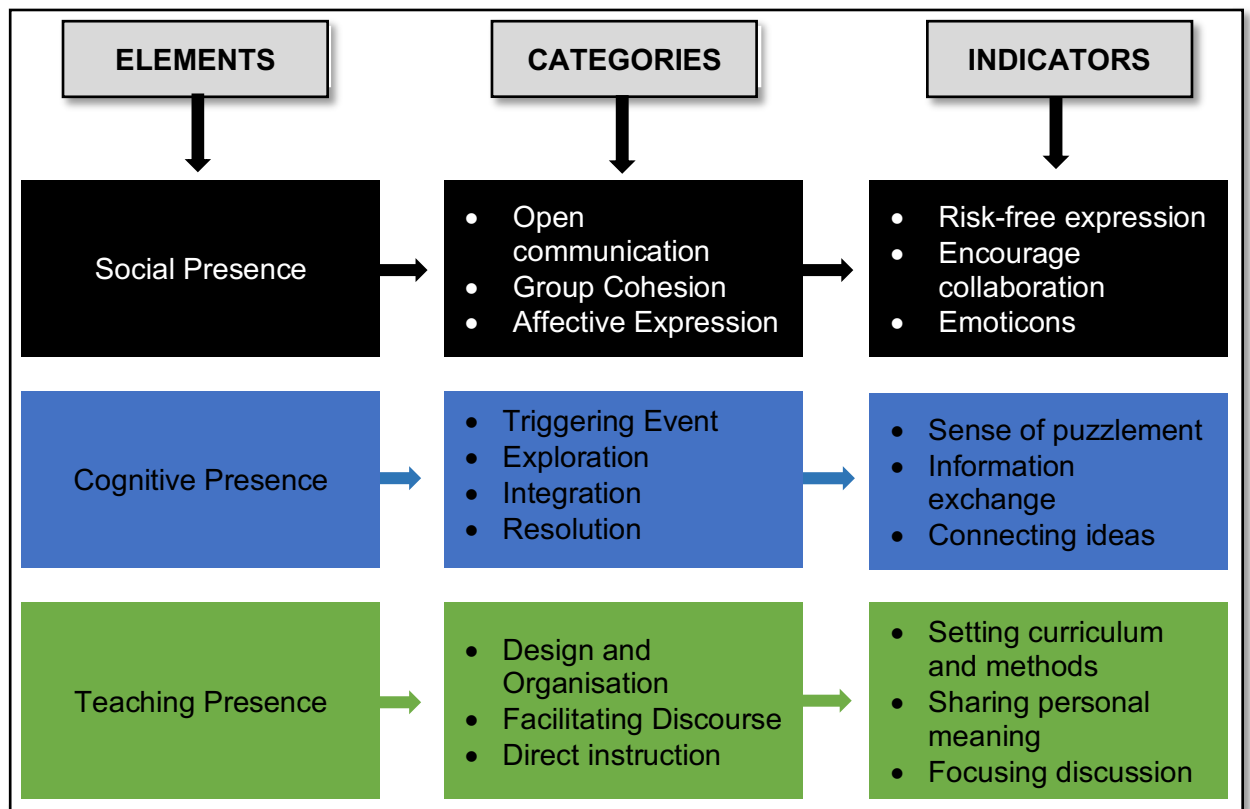


Figure 2.1 Col elements, categories and indicators.

Each of the three presences will be discussed in more detail.

2.2.1. Social Presence

The 'social presence' in online environments has been defined as the way that students portray themselves in their online interactions in the absence of face-to-face communication (Kumar, Dawson, Black, Cavanaugh & Sessums, 2011). Student collaboration using WhatsApp with other students and with lecturers gives rise to a 'social presence' and a sense of online community (Garrison, 2011). This co-operation relates to this study where lecturers and students have an online learning community (WhatsApp) which they used to achieve educational goals. 'Social presence' is linked to participation among collaborative group members. In this study group members included students and their lecturers (Buuren, Vermeulen, Van Acker & Kreijns, 2014). Rogers and Lea (2005) affirm that a common social identity within a group and not a personal identity is crucial for cohesive group behaviour. Conflict can, however, undermine the unity of a group.

According to Rogers and Lea (2005) 'social presence' is the ability of participants to identify with the community; for example, in the course of this study students communicated in a trusting environment, and developed good relations. In text-based online communication, lacking in nonverbal communication cues such as body language, physical presence and voice projection, these do not prevent the 'social presence' from forming. This was evidenced in this study where students were not concerned about communication cues when they were utilising WhatsApp at home. Garrison, Cleveland-Innes and Fung (2004) define 'social presence' as an affective expression, where learners share personal expressions of emotion, feelings, beliefs and values.

There are three fundamentals of 'social presence' (Garrison, 2011).

2.2.1.1. Open communication

Open communication reflects the interactive and purposeful form of communication (Kreijns, Van Acker, Vermeulen, & Van Buuren, 2014). Social presence allows students to communicate openly, convey information about class changes, venues where learners build and sustain a sense of commitment, and where learners interact around common intellectual activities and tasks. Kreijns et al., (2014: 9) state that "asking questions, complimenting, getting feedback and expressing agreement" are indicators of open communication. These indicators of Col are fully compatible with the way both students and lecturers utilise WhatsApp. Some students ask questions and receive feedback from their classmates and lecturers. Communication designers should require discussions from their participants; to answer their classmate's questions and to consider how to introduce students to the unique nature and learning potential of online discussions (Garrison et al., 2004).

2.2.1.2. Group cohesion

According to Dixon, Kuhlhorst and Reiff (2006: 160) "group cohesion and community are related to higher-quality outcomes. Social presence, in a community of inquiry, must create personal but purposeful relationships." Addressing participants by their name, using the inclusive first-person plural and salutations are indicators of group cohesion (Kreijns et al., 2014). Indicators of 'group cohesion' on WhatsApp's show where the platform enables collaborative learning environments, where students work

together on the WhatsApp group-chat to complete group projects and assignments. Garrison (2007) suggests that the development of a social presence should be based on open communication, group cohesion, and making personal connections. Developing a climate for open communication and increasing participation in group cohesion are vital for the production of a Col. Open communication among students and lecturers when using WhatsApp gives rise to group cohesion. The barriers that participants experience when employing WhatsApp is particularly related to cyberbullying. Since classes are large and have many different cultures, students need to learn to respect one another in an online community.

2.2.1.3. Affective expression

Garrison, Cleveland-Innes and Fung (2004:4) state that “affective expression its where learners share personal expressions of emotion, feelings, beliefs and values.” When students collaborate online, they share their experiences and emotions about their university work. Anderson (2007) supports this view and states that indicators of social expression are expressions of emotion. Emotions are regarded as crucial to student adjustment to being an online learner (Cleveland-Innes & Campbell, 2012). Some indicators of affective expression include: use of emoticons, conspicuous capitalization, teasing, and self-disclosure. Presenting details of private life and expressing vulnerability (Kreijns et al., 2014: 9) is an example. WhatsApp has access to many emoticons and students use this access to express their feelings on the WhatsApp group-chat. Students share their views of academic courses on group-chat and they share their personal life matters which sometimes frustrates other students who do not understand their situations.

2.2.2. Cognitive Presence

‘Cognitive presence’ involves the extent to which students are able to use their critical thinking skills to construct meaning (Garrison et al., 2010). This involvement is related to this study where students used WhatsApp and their cognitive skills to perform learning activities. ‘Cognitive presence’ indicates the extent to which learning objectives are achieved. Cognitive abilities include: high-level instruction making inferences, observing connections, verifying, and organizing generate better results when they are integrated cooperatively (Resnick, 1987). The goal of cognitive

presence is to promote the analysis, construction, and confirmation of meaning and understanding within a community of students through reflection and discourse.

According to Garrison, Anderson and Archer (2000: 2) “cognitive presence is the construction of meaning through sustained and permanent communication which is achieved through greater use of group work that values the personal contribution and promotes secure learning environments to foster exchange.” The elements of ‘cognitive presence’ deliver a complete, intelligible catalogue of the thinking and education processes that occur in a collaborative constructivist environment. This register of functions is related to this study where social media (WhatsApp) help student with collaborative learning.

There are four fundamentals of ‘cognitive presence’ (Garrison, 2011).

2.2.2.1. Triggering event

A ‘triggering event’ comprises acquisition of knowledge such as a teacher’s homework assignments that lecturers provide to students (Garrison, 2011). This trigger event aligns to this study in that lecturers send different types of work to students on a WhatsApp group function. This phase identifies any dilemma that arises from experiences in the context of education. An educator usually openly communicates learning problems or work that becomes a ‘triggering event’. A critical role of the teacher, in actualizing ‘teacher presence’, is to initiate, shape, and, in some cases, eliminate triggering events so that the aim of the education, which is to achieve great results, remains achievable.

2.2.2.2. Exploration

Garrison and Anderson (2003) argue that ‘exploration’ is an inquisitive, divergent process which involves first understanding the nature of the problem, and then seeking relevant information and possible explanations. Students ask questions early in this phase. They are required to perceive or grasp the nature of the problem, and then move to a fuller exploration of relevant information. This ‘exploration’ phase is directly related to this study in that students were expected to ask their classmates and lecturers questions via WhatsApp. This ‘exploration’ takes place in a CoI by moving between the private and shared experiences that include critical reflection and

discourse. In this phase, students start to select according to what is applicable to the educational issues they are experiencing. Brainstorming, questioning and exchanging of information are characteristics of this phase.

2.2.2.3. Integration

Park (2009: 143) indicates that “integration is the construction of meaning from the ideas generated in the exploratory stage. It is the teacher who must diagnose misconceptions; provide probing questions, comments, add additional information and effort to insure continuing cognitive development and to model the critical thinking process.” These ideas connect to this study where lecturers sent learning resources to students to use for an assessment and for any given task. This phase is characterised by constructing meaning from the ideas produced in the exploratory phase. During the transition from the exploratory phase, students start to evaluate the relevance of ideas on how well they connect, and explain the issue or event under consideration. Students move repeatedly between reflection and discourse. An indication of the integration of ideas and the building of meaning must be indirect from communication within the community.

2.2.2.4. Resolution

The fourth phase is the ‘resolution’ of the problem; managing disruption by resolving issues. The researcher was interested during interviews on how lecturers and students came up with strategies to manage disruptions encountered in the WhatsApp group. The progress in this phase depended on clear expectations and opportunities to apply newly created knowledge. In this phase, the students moved to a new dilemma with an expectation that they gained the required skills. The results of the application phase lead to further problems and new triggering events which encouraged another cycle to continue over again (Garrison & Archer, 2000).

2.2.3. Teacher presence

Kumar et al. (2011:127) define teaching presence as a “facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes.” This component of Col is evident in this study where students were utilising WhatsApp beyond mere communication, as they interacted with lecturers for learning purposes. According to Garrison (2009) designing

an online learning experience is a challenging task because it must concurrently consider both social and cognitive presence concerns. Care must be taken to plan for a welcoming climate as well as activities that engage students in collaborative and reflective tasks that have clear outcomes.

2.2.3.1. Design and organisation

The 'design and organisation' phase of the 'teaching presence' is the planning and design of the structure, process, interaction and evaluation aspects of the online course (Anderson et al., 2000). The activities in this phase of 'teaching presence' consist of re-creating PowerPoint presentations, putting lecturers' notes onto the Blackboard platform or course site, developing audio, video, and offering guidelines on how to utilise the medium effectively. This relates to this study, as lecturers used WhatsApp to send the learning materials to students such as audio and PowerPoint (Ke, 2010).

2.2.3.2. Facilitating discourse

The second category of the 'teaching presence' is facilitating various learning activities. According to Akyol, Ice, Garrison and Mitchell (2010) 'facilitation of discourse' is important for instructors to remain true to the conceptual foundation of CoI and ensure that their actions during the discussion process align with a collaborative, constructivist paradigm. In this category the responsibility of 'teaching presence' is to monitor and manage discourse to ensure that it is productive and learners stay engaged; making sure they fully participate in collaborative learning activities such as project-work which will demand a different level of facilitation. This happens when lecturers pose questions to students to keep them engaged in discussions.

Too much or too little 'teaching presence' in the form of facilitation can have adverse effects on keeping the discussion focused and realizing constructive outcomes. Guidance must be readily available when the group needs it, care must be given to provide students with the necessary control and responsibility. There are times when a more direct instructional approach is required. According to Arbaugh and Garrison (2007) the role of 'facilitating discourse' is associated with sharing meaning, identifying areas of agreement and disagreement, and seeking to reach understandings. 'Facilitating discourse' requires the instructor to review and comment upon student

responses, raise questions and make observations to move discussions in a desired direction, and keep discussion moving efficiently. Students sometimes ask for a formal educational context where an experienced teacher is necessary to provide specific ideas, diagnose misconceptions or summarize discussion, see them in class and explain concepts using other examples or to manage conflict or to provide an introductory mini-lecture or lesson.

2.2.3.3. Direct instruction

Garrison et al. (2001) conceptualise 'direct instruction' as the instructor's provision of intellectual and scholarly leadership, in part through sharing their subject matter knowledge with the students. Subject matter experts play this role because of the need to diagnose comments for accurate understanding, inject sources of information, direct discussions in useful directions, and scaffold learner knowledge to raise it to a new level. This phase of 'teacher presence' happens when lecturers play a critical role in guiding and sharing subject knowledge with students during the utilisation of WhatsApp. Responsibilities of the instructor here are to facilitate reflection and discourse by presenting content via various means of assessment and feedback (Garrison & Arbaugh, 2007) and an assessment tool.

Instructors must have both content and pedagogical expertise to make links between contributed ideas, diagnose misperceptions, and inject knowledge from textbooks, articles, and web-based materials. Lecturers send links to students to access learning materials such as articles, videos, and PowerPoint via WhatsApp. Direct instruction must not deter students from taking responsibility for constructing meaning and sharing in a community of inquiry. The theory of Col was chosen for this study because a combination of its three components ensures a collaborative constructivist e-learning educational experience of students. The theory is related to the study because it deals with online teaching and learning which is supported by the Col.

2.3. LITERATURE REVIEW

This section focuses on a literature review, conceptualisation of WhatsApp, the use of WhatsApp for teaching and learning, students and lecturer's perceptions of using WhatsApp and Blackboard as a teaching and learning tool, and problems encountered by students and lecturers when using WhatsApp.

2.3.1. Conceptualisation of WhatsApp

Aburezeq and Ishtaiwa (2013) defined WhatsApp as a cross-platform mobile messaging app that permits users to chat in real-time without having to pay for short message service (SMS). The application (WhatsApp) is usually used on certain cell phones and computers (Sivakumar 2016). The users only need to connect to the internet or buy data bundles in order to use it. Simui, Mwewa, Chota, Kakana, Mundende, Thompson, Mwanza, Ndhlovu and Namangala (2018) concur that users need internet and data in order to utilise WhatsApp.

Ta'amneh (2017) defines WhatsApp as a social media that allows users to access and share information. WhatsApp is a tool for information sharing. Srivastava and Kiran (2018) postulate that WhatsApp is quick and fast; users can update status photos or videos and send their location by using Global Positioning System (GPS). This is a crucial feature of WhatsApp especially if a person is unsure about the place that they are travelling to; they can ask for a location pin to be sent. Some students put their useful information on their statuses which helps viewers to learn and get information from the status updated.

Maíz-Arévalo (2018) argues that usually a WhatsApp user prefers to choose the picture and status that other users see when they chat on WhatsApp. This helps to identify the person you are intending to send a message to. As elucidated by Robin, Yanenz and McCo (2019) WhatsApp is an application that offers messaging and calls, in an easy, safe and trusted way of communicating worldwide. According to Martins (2019), WhatsApp is undoubtedly the most current and attractive social media among smartphone users and can be used for a variety of different interesting functions. WhatsApp is an application that enables users to receive information instantly and respond. Receiving information quickly encourages people to use the application. Barhoumi (2015) explains that WhatsApp is a free application tool, however, people must buy data bundles in order to use it. Tawia et al. (2014) suggests that students enjoy to be on WhatsApp since it costs less. This happens because the majority of students are unemployed and still financially dependent on their parents; they themselves cannot afford expensive social media. This dependency increases the utilisation of WhatsApp among students.

WhatsApp consists of different functions such as text messages, attaching images, audio files, video files, links to web addresses and it can be used to facilitate communication (Sayan, 2016). “WhatsApp, a mobile instant messaging application, has reached 500 million users worldwide, sharing 700 million photos and 100 million videos daily” (Acton & Koum, 2014: 12). In the South African context, Mofolere (2016) argues that although numerous social media have been introduced in the country, few have been as widely received as WhatsApp. Mofolere (2016:615) states that “today WhatsApp is used in South Africa by 15 million subscribers compared to Facebook with 9 million.” Dhimmar and Irfan (2019) state that WhatsApp is an effective application that allows the flow of ideas and information. WhatsApp is a suitable tool for information sharing and ideas it can be used as a teaching and learning tool. Several studies have been conducted about the utilisation of WhatsApp for teaching and learning in higher education’s however, there is a gap as few studies have solely investigated the UoTs.

2.3.1.1. Use of WhatsApp for teaching and learning

WhatsApp is being utilised for different purposes in the teaching and learning process. It is used in different ways such as teaching and learning, as a collaborative tool, and WhatsApp as a communication tool. The tool is utilised as a platform to improve English and it is accessible and an available tool.

2.3.1.2. WhatsApp as a teaching and learning tool

Although WhatsApp is mainly used for communication, students and lecturers in HEI’s are using it for sharing information and to facilitate teaching and learning. Gon and Rawekar (2017) and Chaka and Govender (2017) argue that WhatsApp enables learning beyond the classroom border and high availability of lecturers to students’ questions can potentially enhance the learning process.

Rambe and Bere (2013) agree that WhatsApp is a useful resource in South African HEI’s because lecturers use it extensively to reach out to all students. WhatsApp offers university students the opportunity to send messages without limits and create study groups which can engage in academic forums. Familiarity with WhatsApp means no training is needed on how to use WhatsApp.

Buhari, Ahmad and HadiAshara (2014) postulate that WhatsApp is widely used as a social media platform among polytechnic students in Nigeria to facilitate teaching and learning. Students regularly exchange information and learning by using WhatsApp as a learning tool. They like the platform to facilitate their learning because it enables knowledge sharing and interactive learning in groups to occur. According to Ta'amneh (2017) a group of students who learnt using WhatsApp, performed better than students who learnt using the traditional face-to-face technique. Social media are used to improve pedagogical practices, information access and communication in HEI's (Rambe & Chipunza, 2015). According to Nanda (2019) WhatsApp plays a pivotal role in improving learning to assist slow learners by stimulating their interest and developing communication among students.

Rosenberg and Asterhan (2018) postulate that students feel free to express themselves on WhatsApp compared to face-to-face encounters in the classroom because the application allows them to be invisible within a group. WhatsApp suits diffident students who prefer a textual interface (Rosenberg & Asterhan, 2018). The platform accommodates all students including those who are shy, slow learners, and fast learners.

Chipunza and Rambe (2013:331) postulate that "students at a South African university perceived WhatsApp as a level for bridging to peer-generated resources, heightening on-task behaviours and promoting important context free-learning." Manan (2017) states that WhatsApp plays a critical part in motivating students to learn. Robles et al. (2019) argues that WhatsApp can be used as a tool for distance learning. Newby, Stepich, Lehman and Russell (2000:210) explain distance learning as "an organised instructional program in which teacher and learners are physically separated." In that context, WhatsApp saves transport costs and travelling times. Cetikata (2017) elaborates that the gadget should not be disregarded because it has the potential of a natural educational technology and the qualities to contribute to education positively. Amry (2014) contends that students in universities are content to use WhatsApp as an educational tool. WhatsApp plays a crucial role for students and offers lecturers skills to upgrade the level of competence in order to successfully achieve a more student-centered learning environment and have more differentiated instruction (Sayan, 2016).

Rosenberg and Asterhan (2018) proclaim that WhatsApp allows students to help each other for example uploading homework, complete tasks, share answers and solutions. Urien, Erro-Garces and Osca (2019) state that different members are responsible for providing specific information on certain aspects. Ujakpa, Heukelman, Lazarus, Neiss and Rukanda (2018) agrees and adds that WhatsApp helps students to access the learning materials that are sent by lecturers, activities and to schedule group discussions. However, researchers such as Yusuf, Adams and Dingley (2016) have reported that sharing course-related materials online increases absenteeism because students do not see the need to be present on campus if they can receive all the required materials on WhatsApp.

Using WhatsApp Messenger in the UK education system has proved to have numerous advantages for undergraduate nurses. These include: increasing the accessibility of resources for test preparation and providing a platform for explanation of unclear aspects of the course (Yusuf et al., 2016). Mellat and Khademi (2015: 23) concur that “WhatsApp provides students with the ability to exchange text messages, images, videos, and voice notes with their classmates and from lecturers to students.” Such an exchange of vital information in higher education is linked to learning as opposed to the old talk-and-chalk traditional teaching methods. The use of such technology enables students to have access to all relevant educational information communicated to them by other classmates and lecturers in their conversations (Barhoumi, 2015).

Bansal and Joshi (2014) posit that in India students welcome WhatsApp as a learning tool that has the potential to enable them to interact with lecturers, share learning material and easy access of information. Students in India agree that learning through WhatsApp has educational benefits such as: immediate feedback to the problem, learning on the move, deeper clarity on issues, and quick revision of previously learnt topics. Bouhnik and Deshden (2014: 20) contend that “many of the students indicate that they also use the private channel to send their teachers personal messages, such as questions or requests for help with a variety of issues.” These students are not comfortable with sending messages on group-chats, because WhatsApp is an accommodative tool for groups and individuals and it becomes easier for them to use it.

Kamel Boulos, Giustini and Wheeler (2016) state that in the UK, WhatsApp assisted students to develop a 'social presence' among first-year undergraduate radiography students. The use of WhatsApp provides students with a platform to demonstrate characteristics relevant to the development of 'social presence'. Students use the WhatsApp platform for sharing their college timetable. The use of WhatsApp in the UK was praised for allowing students to find and utilise resources such as journal articles, whilst simultaneously participating in an interactive group discussion (Raiman, Antbring & Mahmood, 2017). Martins (2019: 16) used WhatsApp in a health care education and applauded the social media stating:

... the use of mobile applications has been shown to be useful for educational purposes. Using WhatsApp in the primary health care education setting has demonstrated a number of benefits for undergraduate nurses. These include the usefulness of the application for integrating theory and clinical practice; increasing the availability of resources for test preparation and providing a platform for clarification of uncertain aspects of the course.

A study by Urien et al. (2019) study revealed that candidates in the Business Administration and Engineering Faculties regarded WhatsApp as helpful. They achieved impressive results in their specialisation subjects. This indicates that WhatsApp has a positive impact on academic performance of university students. A study conducted by Eberechukwu and Queendarline (2018:19) revealed that "candidates strongly agreed that the use of WhatsApp group-chat for education together with social life in the university boost their academic performance."

2.3.1.3. Co-operative learning

WhatsApp is used as a collaborative tool by lecturers to teach students (Rambe, 2015). Wiedmann, Rummel and Spada (2017:3) describe collaborative learning as a "learning process of two or more students working collaboratively to find a joint solution to the group task at hand." Students accomplish this by sharing their knowledge, building common ground and joint knowledge (Wiedmann et al., 2017). In collaborative learning, students feel more free to contribute their own unique skills and knowledge. Hendry, Frommer, and Walker, (1999: 359) stated that "new knowledge is 'constructed' or created from within individuals in their interrelation with the world." Lecturers utilise

WhatsApp groups to allow learners to construct and share knowledge with their classmates (Al-Qaysi, Mohamad-Nordin, & Al-Emran, 2020). These links to constructivism, believe that learners learn better when they are actively constructing knowledge in a collaborative environment (Piaget, 1972). According to constructivist theorists such as Piaget (1972), knowledge exists within the learners and they can construct their own meanings if they are given an opportunity.

Collaboration enables easy and quick transference of links to study materials among Indian students (Arumugam, Sowmiya & Krishna, 2017). Alqahtani, Bhaskar, Vadakalur Elumalai, and Abumelha (2018: 9) argue that “with WhatsApp, there are many chances for students to share their views about school work or any topic given to them especially those who do not feel comfortable in the classroom and those who need time to think and respond”. This greatly encourages group work among students.

In the Nigerian context, Akintola (2017) states that WhatsApp is a students' favourite learning tool since it enables them to learn collaboratively. Chaka and Govender (2017) concur that Nigerian students have positive attitudes towards using WhatsApp in education, as it enables them to co-operate and work as a team. Lu and Churchill (2014) contend that online communication between students and lecturers plays a vital role in collaborative work. Srivastava and Kiran (2018) suggest that the WhatsApp group feature allows users to collaborate across geographical boundaries irrespective of different geographical features. In some areas, however, WhatsApp does not connect well, especially in rural areas.

Sivakumar (2016) posits that one of the WhatsApp features is the ability to create WhatsApp groups. Students create a group (WhatsApp group) and give it a name of the class or subject, for example Post Graduate Certificate in Education (PGCE) 2017 or Master of Education (MED) (Gachago, Strydom, Hanekom, Simons & Walters, 2015). Manan (2017) argues that WhatsApp groups help to create collaborative discussions amongst students: “Student's engagement in mobile learning appears to encourage independent and collaborative learning experiences” (Jan, Ullah, Ali & Khan, 2016:7). Jan et al. (2016) state that collaborative education can occur on social media and plays a crucial role in assisting students to work together to finish a collective objective.

Similarly, Said (2014) postulates that online collaboration between students and lecturers on assignments should be considered when working with social media in order to share knowledge and support. Sayan (2016) echoes the same sentiments that WhatsApp is a relatively new tool in education which has up-to-date features that encourage lecturers and students to use in order to enhance collaborative learning.

In HEI's, WhatsApp is used to enhance discussions and sharing information amongst students and their lecturers (Yeboah & Ewur, 2014). It helps students to self-construct and share information and knowledge for learning through computers or mobile devices. Students can access all learning materials and conversations during this collaboration. They need to be available at the specified time. According to Voyiatzaki and Avouris (2014), WhatsApp supports active and collaborative learning because it facilitates group work and assists teachers with their teaching responsibilities. Teachers spend less time in the classroom and more time on the WhatsApp group. Eberechukwu and Queendarline (2018) report that students found collaborating on WhatsApp group-chat increased their attention in the course. WhatsApp catches student interest and encourages them to participate in their learning. This finding confirms what Fattah (2015) discovered, that, WhatsApp technology enhances student participation.

Barhoumi (2015: 230) states that "WhatsApp group discussions are more positive and oriented toward the use of the blended learning process compared with the attitudes of the students in the control group towards in-class learning". Eberechukwu and Queendarline (2018:22) confirm that students prefer group discussions on WhatsApp compared to face-to-face discussions in classrooms since some students may encounter learning barriers such as: discrimination and some come from poor families which makes it difficult for them to afford travelling fees and to stationery.

Sivakumar (2016) states that WhatsApp allows students to reflect critically upon their questions before giving their opinions. WhatsApp can be used to understand more fully how students communicate and reflect (Carbonell, Chamarro, Oberst, Rodrigo & Prades, 2018). Rajab and Rashid (2016) contend that group discussions allow students to communicate and discuss course-related topics with fellow classmates and their instructors. In these groups, lecturers and students employ different skills such as

speaking and writing skills which positively benefit those who are not skilled enough to write and speak English fluently.

Bansal and Joshi (2014) contend that some students disagree that WhatsApp helps to initiate collaborative learning: these students state that not everybody shares information on a WhatsApp group. Some students do not cooperate in group discussions however; they expect information from their classmates which stifles collaborative learning. According to Gon and Rawekar (2017: 9), "Technology can intensify the students' reflection on how to carry out their task collaboratively." The use of WhatsApp in teaching and learning is ideal in the digital era since it enables collaborative learning among students and lecturers and it is affordable, a vital factor in a poor third economy (Fattah, 2016).

2.3.1.4. Using WhatsApp to disseminate information

Students and teachers rely upon WhatsApp groups for communication in various ways; they use the group to communicate issues regarding coursework problems, availability of teachers and other announcements (Bouhnik & Deshden, 2014). Availability of information attracts students to refer to WhatsApp. Shifts in technology have improved pedagogical practices, information access and communication in higher education (Ng'ambi, Brown, Bozalek, Gachago & Wood, 2016).

Fauzi (2019) states that WhatsApp is often deployed to solve problems in classroom communications. Lecturers need to prepare well for a discussion on WhatsApp to ensure that all student questions are correctly answered. Before discussions commence on WhatsApp, lecturers need a printed or written lesson plan in order to prepare for all queries and questions that may arise during the discussion process. They should prepare a WhatsApp session as if they are preparing a lesson in a classroom.

Fauzi (2019) states that with WhatsApp, students and lecturers can communicate on the group app without the need to repeat information. In a classroom student often require a lecturer to repeat what they have just explained. With WhatsApp, a student can re-read or replay a voice recording multiple times and receive the information as it was sent, with no changes. Some lecturers, when they are asked questions by

students in classrooms, cannot repeat the exact information as they explained it the first time. But on WhatsApp it is possible and easy. WhatsApp can bring out innovative opportunities to promote effective communication, allowing for significant feedback, offering formal and informal learning opportunities, and supporting cooperative learning (Yusuf et al., 2016).

WhatsApp improves communication among lecturers and students as they are knowledgeable about certain topics, and can explain to their classmates via WhatsApp group (Ujakpa et al., 2018). This is an advantage over teaching a class without blending WhatsApp because some students who miss class would be left behind. WhatsApp enables students to learn collaboratively in class. It is a tool that can be used to promote collaborative learning. Nanda (2019) agrees that WhatsApp plays a pivotal role to assist slow learners by stimulating their interest and developing communication among students. Ujakpa et al. (2018) confirm that WhatsApp is a useful form of social media which improves communication among students and lecturers.

2.3.1.5. The use of WhatsApp to enhance English writing and speaking skills

Most of the universities in South Africa routinely employ English as a Language of Instruction. This means that all enrolled candidates must be able to communicate in English. Some students come from schools where educators use home languages such as isiXhosa and Afrikaans as their Language of Instruction. This compromises their level of competence in both written and spoken English when they arrive at university. WhatsApp provides students with a chance to practise English as LOLT for free, and comprehensive relations develop between students and teachers (Riyanto, 2013). Alqahtani et al. (2018) argue that students feel that WhatsApp could be an efficient online platform in which to practise their English. There are many more benefits of using WhatsApp besides those already mentioned but communication and sharing information to develop their English skills is a newly recognised benefit.

Riyanto (2013) claims that WhatsApp can be used to study and learn a new language and not only as a communication platform. Students who are weak in English can easily learn the language in an entertaining way by participating on WhatsApp group with classmates and lecturers. When attending a college or learning English in a classroom, a student will be required to write an examination.

Alqahtani et al., (2018) state that WhatsApp is an effective social networking site to facilitate English language for enhancing language skills and developing their self-confidence, improving their attitude and interest to speak the English language: “WhatsApp helps students to inculcate a more positive attitude concerning learning English as a second language, improve communication skills, enhance their reading skills, improve writing skills, learn new vocabulary, and develop confidence to write, read, and communicate, respectively” (Alqahtani et al., 2018:113). Aktas and Can (2018) reveal that many of their students want to employ WhatsApp for developing reading skills rather than reading newspapers. In order for students to learn continuously, information needs to be easily accessible. Aktas and Can (2018) state that WhatsApp motivates students to read and it helps students to believe in themselves.

Aburezaq and Ishtaiwa (2013) assert that students draw upon WhatsApp to develop their spoken and written English language skills. Riyanto (2013) claims that WhatsApp helps students to improve their writing skills more than face-to-face teaching does. WhatsApp creates a safe and supportive environment for students to learn as they are amongst classmates and friends (Mwakapina, 2016), thus could easily type and send a voice note in English language. Students who struggle with languages use this opportunity to learn by copying the sentence structure, wording, vocabulary and the use of prepositions when they send messages to others without fear of ridicule or undue correction (Aburezaq & Ishtaiwa, 2013). Learning a new language is a challenge and it is easy to make mistakes but when using WhatsApp students become positive in learning English within their friendship circles (Riyanto, 2013). Students are more relaxed at home when learning via WhatsApp compared to learning in their classroom. They do not worry overly about making mistakes. Carrera’s (2018) study shows that lecturers use WhatsApp to send new vocabulary to students who are struggling. Sharing new vocabulary empowers students with more knowledge; they learn to apply synonyms when writing a sentence. This allows students to express themselves in an advanced English manner, with more terminology options. This makes it easier for them to understand the content.

The use of a WhatsApp group does not only help students develop their English writing and speaking skills; it helps students to be more knowledgeable and obtain different

skills such as negotiating skills and training critical thinking skills (Castrello, Monje & Barcena, 2014). Kustijono and Zuhri (2018:4) concur by stating that “WhatsApp, in the learning process, can effectively train critical thinking skills.”

2.3.1.6. Accessibility and availability of the WhatsApp application

Strachan and Sanaa (2015) suggest that universities need to observe closely which social media the students favour and select that application to support students. According to Sayan (2016), WhatsApp is accessible on almost all Smartphones. Even those students who guard their privacy and do not want to be on a WhatsApp Group, have no excuses to say they did not receive information because WhatsApp is accessible on all smartphones. Simui at al. (2018) postulate that the WhatsApp application exists or is available on cell phones as well as laptops and computers. By downloading the WhatsApp app, students can use it comfortably without limit.

Manan (2017) concurs that WhatsApp helps in reducing the cost of photocopying assignments and lecture materials. WhatsApp is easily accessible to poor students and lecturers who are unable to pay for their student and staff cards in order to print. Although some lecturers have free access to a photocopy machine in their institutions, some printers are old. Walking around carrying loads of printed materials is tiring for any staff member. They choose WhatsApp as it is easily accessible and is ecologically more sensitive. WhatsApp permits lecturers to upload notes, photos or for sharing links to study materials.

Aburezeq and Ishtaiwa (2013) state that an important feature of WhatsApp is the offline messaging system. All messages conveyed when the device is off or when it is located outside the network coverage area, are automatically saved and retrievable when the device is turned back on again. Similarly, Sivakumar (2016: 15) add that:

... the retrievability of messages posted when students were offline, outside network coverage or when their devices were switched off implied that they could participate any time irrespective of context. Multiple interaction modes and diverse temporal times widened opportunities for student involvement without missing conversation flows.

2.4. STUDENT AND LECTURER PERCEPTIONS OF USING WHATSAPP AND BLACKBOARD AS A TEACHING AND LEARNING TOOL

To discuss how students and lecturers felt about using WhatsApp versus Blackboard, this discussion will begin by explaining how to log in to Blackboard. The discussion continues providing a narrative on the struggles students typically face when using Blackboard. The section concludes with the positive experiences of using Blackboard.

Mwakapina et al. (2016) and Simui et al. (2018) state that students and lecturers in their research projects, commented on the inaccessibility of learning materials and preferred using WhatsApp to Blackboard. However, in order to use Blackboard, students need to know how to log on to the learning platform. According to Ince and Irwin (2015: 80), "Blackboard is password protected with the students' campus-wide username and password, and courses are only accessible to students enrolled in the class." El-Sofany, El-Seou, Farouk (2019) concur by stating that "Students are used to username and password authorisation to access the Blackboard system."

Moodley, Singh and Cloete (2015) explain that students complained about the low number of computers that were available at their university. This caused a serious problem for students who needed access to computers, especially when there were assessments and assignment deadlines to be met. Students complained about the poor internet service which they found to be disruptive to their studies when utilising Blackboard (Moodley et al., 2015).

In the context of Kenya, Makokha and Mutisya (2016) claim that students struggle with poor internet connections off the university premises and the high expenses involved in Wi-Fi connectivity. Alturki and Aldraiweesh (2016) agree with this study by stating that due to slow internet, lack of guidance on how to use Blackboard, students were unable to effectively utilise Blackboard at their university. Meda (2017) further revealed that students felt that it is difficult to do group work on Blackboard because of the issues that are experienced by students such as internet access and their inability to use Blackboard properly. Due to the challenges that students were facing on Blackboard, they preferred to participate more on WhatsApp. Meda (2017) indicates that lecturers

instruct students to check and download material on Blackboard, but disappointingly, students do not access those learning materials.

Riley (2013) states that the Blackboard system is an issue for both students and lecturers as it requires users to have extensive technological knowledge in order to use the Blackboard system competently. Lecturers observed that students were not knowledgeable when it came to using Blackboard as many of them had never used it before (Cilliers & Niekerk, 2017). Similarly, in Europe and England, Heinze and Procter (2004) state that students felt that the level of support and guidance from lecturers on how to use Blackboard was not satisfying. That is why they were not optimising the LMS in some institutions.

In Botswana, lecturers complained about the lack of training and feeling helpless about how to use Blackboard especially when uploading learning materials (Uziak et al., 2018). Ismail and Sahil (2018) content that in the context of Bahrein, the Arabian Gulf University staff members needed to be trained on how to develop online courses and administer their student's learning via Blackboard. Robin, Yanenz and McCo (2019) accept that WhatsApp is an application that offers messaging and it is easy to use. No training and guidance is required on how to use WhatsApp, however, many users are unfamiliar with the application like Blackboard. As a result, students prefer learning through the medium of WhatsApp rather than Blackboard. Lack of training on how to use Blackboard, in this current study, meant that lecturers needed to take time out of their curriculum delivery, as the use of Blackboard was not part of their curriculum content.

In Africa, students and lecturers in HEI's, have different views about the use of Blackboard. In Lesotho, students viewed Blackboard as a tool that made them actively participate in their learning and they could access Wi-Fi at anytime and anywhere (Nyabawa 2016). Boshielo (2014:32) from South Africa, postulates that "I find the Blackboard-learn easier and available when I am inside the campus, but I struggle when I am outside." He concurs that students support the use of Blackboard, as it offers them an opportunity to access learning resources, announcements about assessments, develop communication, and collaborate with each other. He continues by stating that with Blackboard, students may access the learning system at any time that is convenient as long as they are connected to internet.

Students who praised using Blackboard rather than WhatsApp are supported by Uziak, Oladiran, Lorencowicz and Becker, (2018) who argue that Blackboard is a class management tool especially when it comes to sharing information such as timetables and learning resources. Cilliers and Niekerk (2017) mentioned that during the #FeesMusFall strike in South Africa, Blackboard played an essential role as some students were able to access their learning materials on Blackboard.

2.5. PROBLEMS ENCOUNTERED BY STUDENTS AND LECTURERS WHEN USING WHATSAPP

Although WhatsApp is believed to play a role in the teaching and learning process, some scholars view the application as not ideal to use in education because its primary purpose is communication (Mwakapina et al., 2016). Altaany (2017) reiterates that WhatsApp cannot promote meaningful student discussions and unskilled lecturers and students can use it in unproductive ways. The application has some limitations, such as not being able to send large file sizes. Some students might not want to post crucial information via the WhatsApp group which will impact on discussions and relevant learning which is supposed to take place. According to Nawaila (2018) WhatsApp groups permit 256 participants only. This negatively impacts classes that have large numbers of students because they will have to create more than one WhatsApp group for the same class. This does not favour all students in terms of information sharing and explanation, because you find that the other group has brilliant students and all group members benefit and the other participants are less knowledgeable meaning that the group with more knowledgeable students may have more chances to excel academically than the other group.

Ahmed and Hassa (2017) state that all students carry at least one smart phone with a speedy internet connection: they are engaged with their phones on campus and sometimes even in classroom but they are weak both in subject knowledge and in skills of English language. Riyanto (2013) reports that it can be frustrating to receive several messages. Cetinkaya (2017) concurs that it can sometimes be annoying due to the number messages and the repetition of information on group-chat (Cetinkaya, 2017).

Carrera (2018) states the same issue that students felt overwhelmed because of the many messages. Information overload from students on WhatsApp group finishes the data (Bouhnik & Deshden, 2014). Some students can exit the group so that their (data) is not wasted on WhatsApp Group in order to peacefully control their gadgets. Manan (2017: 6) states that:

... the emerged themes include misuse of the platform due to the lack of rules, exclusion of students without smart phones and lack of privacy due to limited options. Class group being misused in such a way that the purpose of the group may not be attained. They pointed to the fact that other students post too many messages that are not academically oriented like football matches, business adverts and the like.

Ujakpa et al. (2018) recommended that WhatsApp needs to be developed in such a way that all messages that are sent on WhatsApp group must first be viewed by the group administrator or a lecturer so that she/he can delete if the message is unnecessary and not related to the learning and teaching. Bernal-Ruiz, Rosa-Alcazar and González-Calatayud (2019) revealed that students are deeply involved on WhatsApp even at home, some students when they hear the WhatsApp message they stop talking to their wife and parents. "When I hear my WhatsApp, I stop talking to my parents." (Ruiz et al., 2019). Some students may use the social media in a wrongful way and bully others.

Cyberbullying has been defined as a modern form of bullying accomplished through electronic forms of contact for example SMS, Facebook, YouTube (Palladino, Menesini, Nocentini, Luik, Naruskov, Ucanok, Dogan, Schultze-Krumbholz, Hess & Scheithauer, 2017). Aizenkot and Rosenbaum (2018) found out that students at the universities are witnessing several types of cyberbullying, for example: insults; curses; forced removal from a WhatsApp group and offensive photographs. This makes students feel insecure and unsafe when using WhatsApp, and they then stop using the social media. This decreases the number on participants on WhatsApp group. Cyberbullying has potentially overwhelming effects on the emotional and mental well-being of student's being targeted. A study conducted by Carol, Walker, Sockman and Koehn (2011) showed that students experienced different types of cyberbullying on social media where students sent excessively explicit messages such as: giving illegally private information about student life, their body, their sexual experiences, and

sending pornographic /offensive images and messages. This leads to some students feel embarrassed especially those who are part of the religious such as Christian and Muslim religions.

Carol et al. (2011:35) elaborate on the way in which students are bullied on social media stating that “Pretending to be someone he or she wasn’t. For example, falsely representing him/ herself as a different person or gender, claiming a false identity, status or position, pretending to be you.” This makes some parents avoid buying smart phones for their children if they are experiencing these traumatising experiences of cyberbullying on WhatsApp. David, Sam, Bruce, Collins, Agyemang, Amponsah and Arkorful (2018:10) concur that “A high number of Ghanaian university students have experienced some form of cyberbullying on at least one occasion in the course of the last 6 months.”

Orel, Campbell, Wozencroft, Leong and Kimpton, (2017) agree that cyber-victims could ask help from their university lecturer. Hamad (2018) emphasised that no one can contradict that the current 21st century generation has become addicted to several applications that are found on smartphones. Muthaiyan and Kanchana (2016) revealed that there are candidates who use WhatsApp for their leisure time.

Simui, Mwewa, Chota, Kakana, Mundende, Thompson, Mwanza, Ndhlovu and Namangala (2018: 10) state that “their study discovered that some of the students at the university do not have the privilege to own a Smartphone”. Manan (2017) points out that those who do not own smartphones are left out in everything that was communicated on WhatsApp. Pimmer and Rambe (2018) postulated that speedy responses are impossible due to several situations and technical constraints, and students have to balance their communication endlessly between immediate and delayed answers from their lecturers which is sometimes frustrating. Simui et al. (2018) explain that educational difficulties arose on account of inappropriateness of language between students and the students' assumptions that their teachers needed to be available on WhatsApp twenty-four hours a day, which is impossible. The inability of lecturers to expeditiously respond on WhatsApp badly affected student’s planning and time management because some students had timetables to use WhatsApp during certain times. If the lecturer was unavailable during the time students needed help, their planning was interrupted because they had other responsibilities and duties to do

when they arrived at home. Simui et al. (2018) state that teachers were often annoyed by the flood of irrelevant and senseless messages on WhatsApp group. This mass of messages is caused by lecturers as they were unavailable to reply on time. Pachigolla and Pant (2016) stated that the resources are becoming scarce because of global warming, there are insufficient raw materials to produce learning material such as papers that come from trees. This situation challenges academics to use as many online platforms as they can and WhatsApp is one such a platform which is affordable and user friendly (Gon & Raweka, 2017).

2.6. CHAPTER SUMMARY

This chapter presents the theoretical framework, Col, which underpins this study and literature review. The literature shows that WhatsApp is well used in HEI's by students and lecturers as a teaching and learning tool. Despite the utilization, students and lecturers faced challenges using WhatsApp. The next chapter will present the research design and methodology used in this study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1. INTRODUCTION

This chapter focuses on the research paradigm, approach, and design used to guide this investigation. The researcher presents comprehensive information about the methodology which includes: the sampling, the site, and a discussion of the instruments used to collect data. This chapter explains how the data were analysed and how trustworthiness of this study was ensured. The researcher presents the ways in which the ethical issues were observed. This chapter ends with a summary.

3.2. RESEARCH PARADIGM

De Vos, Strydom, Fouche and Delpot (2011:513) define a research paradigm as a “set of assumptions for collecting and interpreting data”. Lapan, Quartaroli and Riemer (2012) and Creswell (2015) state that every qualitative research has an interpretive perspective which focuses on uncovering participants’ views. Lincoln (2010) contends that interpretivist theories tend to respond to ‘why’ questions. This paradigm was particularly suitable to this study because the researcher wanted to understand why students and lecturers utilised WhatsApp as a teaching and learning tool. The paradigm which guided this study was an interpretivist which sought to interpret and understand the experiences of the selected participants (Thanh & Thanh, 2015).

Coe (2012:10) states that there are six characteristics of an interpretivist case study: critical, systematic, transparent, evidential, theoretical and original. Each one will be discussed in relation to this research study.

The first characteristic is ‘critical’ (Coe, 2012:10). This characteristic actively seeks to question its own assertions, suppositions, approaches, and of those who are involved in the research. In this study the researcher sought to question how staff and students at a UoT made use of WhatsApp.

‘Systematic’ is the second characteristic of an interpretivist paradigm. This research was systematic, which meant it was a deliberate, planned and intentional activity. The researcher explicitly planned the topic, the research questions, the theoretical

framework, the literature, ethical consideration, data collections methods and tools as well as the participant selections.

This research was 'transparent'. The research aims, methods, assumptions, arguments, data and claims have been stated clearly. The findings are explicitly presented in Chapter 4, the Results.

The fourth characteristic of interpretivist case studies is 'evidential'. Case study interpretivist research is evidential in that it appeals to evidence, not opinion, authority or common sense, as the basis of its justification (Coe, 2012). The findings collected from both students and lecturers were correctly recorded as presented by them. No information was added or reduced from data collection instruments.

This interpretivist paradigm research was 'theoretical'. This study was guided and informed by theory, particularly the Community of Inquiry (Col) theory.

The final characteristic of an interpretivist paradigm research is that it was 'original'. The researcher aimed to increase the existing knowledge by confirming previous findings on this topic as presented in this thesis. Participants added to the existing body of knowledge about WhatsApp utilisation as they stated their different views and experiences of utilising WhatsApp as an educational tool.

3.3. RESEARCH APPROACH

The study adopted a qualitative research approach. The main reason for choosing a qualitative instead of a quantitative or mixed methods approach is consistent with having in-depth interactions with participants in order to understand their views about the utilisation of WhatsApp. A small sample, which is qualitative, allows that to happen as opposed to having a large quantitative approach with less interaction with respondents (Cohen, Manion & Morrison, 2011). A qualitative approach was ideal for this study because it provided the researcher with an opportunity to tap into the richness of participants' views about their utilisation of WhatsApp (Creswell, 2012). The approach was chosen since it allowed the researcher to collect data by interacting extensively and closely with both students and lecturers during the study.

3.4. RESEARCH DESIGN

The study used a case study design. Sharan, Merriam, Elizabeth and Tisdell (2016) elucidated that a case study design is usually used in conjunction with qualitative research. This research project is a juxtaposition of these two concepts. The researcher used a group of sixteen university students and two lecturers at a UoT, “bounded by parameters” (Henning, Van Rensburg & Smit, 2004:32) of those who were using WhatsApp to achieve learning outcomes. The qualitatively written results explore the meaning constructed from the data discussing information that was captured within these bounded parameters (Henning et al., 2004:32).

A case study is one which researches separate cases in order to answer the research questions, that begin with ‘why’, ‘how’ and ‘what’ (Guro et al., 2011). Meda and Swart (2017:657) concur with this statement and suggest that: “A case study is usually used to increase the understanding of certain complex phenomena.” In this study the ‘phenomena’ is the aim of investigating WhatsApp utilisation in an initial teacher preparation programme at a UoT in their “natural setting” (Farquhar, 2012:8).

Hancock and Algozzine (2017:10) reveal that “through the use of case studies, researchers hope to gain in-depth understanding of situations and meaning for those involved.” Case study research is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. According to Farquhar (2012:12) “in-depth investigations are, where you generate intensive insight, dig deep, look for explanations and gain understanding of the phenomenon through multiple data sources”.

Cohen et al. (2007:85) compiled a detailed table about the purpose, foci, key terms and characteristics of case study research, as presented in Table 3.1.

Table 3.1 Characteristics of a case study

Approach	Purpose	Foci	Key terms	Characteristics
Case study	To grasp the complexity and situatedness of writing behaviour. To present and represent reality – to give a sense of ‘being there’.	Individuals and local situations Unique instances Two independent cases Bounded phenomena and systems Individual Group Roles Organisations Community	Individuality uniqueness In-depth analysis and portrayal Interpretive analysis Subjective Descriptive Analytical Understanding Specific situations Sincerity Complexity Particularity	In-depth, detailed wide data source Participant and non-participant observation Non-interventionist Empathic Holistic treatment of phenomena What can be learned from the particular case

The detail in Table 3.1 is evidenced in this research as the researcher analysed and interpreted unique in-depth data collected from participants which is one of the key characteristics of a case study research approach. The ‘foci’ of this study were students and lecturers who used WhatsApp for educational purposes and who were in a local situation (UoT). The researcher clearly shared with the participants about the purpose of the studies, its objectives and foci before the research took place. The individual character and scope of this particular project was proven as the participants, the students and staff members, utilised the WhatsApp application differently. In order for the researcher to learn from this particular case, he was a non-participant observer: he was not on the WhatsApp group during the data collection process. This was a non-interventionist study as described by Cohen et al. (2007) in the final column of Table 3.1.

3.5. RESEARCH METHODOLOGY

This section focuses on the methodology utilised to conduct this study. This section presents detailed information about the sample, site, data collection instruments which include focus group interviews, personal interviews and documentary data collections. This was followed by data analysis and trustworthiness which consists of validity,

reliability and triangulation. Ethical consideration follows and this chapter ends with a summary of its contents.

3.5.1. Sample and Sampling Procedures

The sample for this study comprised 18 participants: 16 second-year students and 2 lecturers. 18 participants were chosen because the number was small enough for the researcher to interact extensively with participants (Creswell, 2014) in order to understand how they were utilising WhatsApp and identify the challenges they were experiencing. All 18 participants were selected using purposive sampling which is characterised by deliberately targeting respondents who are information rich (Creswell, 2014). Students and staff were purposively selected because they were using WhatsApp for their educational teaching and learning purposes.

Criterion sampling, which is a type of purposive sampling, was used to select the 16th and 3rd year Bachelor of Education students. It involves searching for individuals who meet a set criterion (Palys, 2008). The criterion that was set, was to select students by examining the class WhatsApp group discussions and to identify eight students from each class who had prolifically and effectively contributed most to the discussions over the past two months. The one group of students were doing their 2nd year in the Further Education and Training (FET) Phase. The other group of eight students were 3rd years in the Intermediate and Senior Phase (ISP). The researcher looked at the two classes using WhatsApp group discussions and identified the 16 students who had contributed the most to the discussions.

The researcher asked permission from the two lecturers for himself to be added to the class WhatsApp groups for a short period of two weeks. During this time the researcher observed the group chats; to determine who were the active participants and quick responders in order to select them to participate in the study. Another strategy that the researcher used to collect selected information was to take screenshots. The researcher asked a student who had been on WhatsApp group chat for two months to take screen shots of their conversations. These screenshots were read by the researcher to check the students who contributed most in the group chat in order to approach them to participate in the study.

The purpose of looking at the two class WhatsApp groups was to select information rich students (Cohen et al., 2007). The selected students were able to share and express their academic and social experiences of their teaching and learning processes using WhatsApp. This is consistent with purposive sampling which targets participants who are information rich.

Two lecturers who regularly utilised WhatsApp in their teaching and learning were selected. The one lecturer was a female who holds a PhD in education. She lectured Creative Arts to the FET 2nd year students. The other lecturer was a male who lectured History in the ISP for the 3rd years students. These two lecturers interacted daily with their students on WhatsApp for educational purposes. Both lecturers employed English as the language of instruction and to facilitate teaching because it was the required language of the UoT.

These two lecturers, were selected by means of a specific type of purposive sampling called 'stakeholder sampling'. According to Palys (2008) 'stakeholder sampling' is a type of purposive sampling that involves identifying people who are mainly involved in designing, using or administering the programme or service being evaluated. These two lecturers were selected since they were directly involved or responsible in designing the context or educational resources and facilitated teaching via WhatsApp. The involvement of these two lecturers helped the researcher to obtain rich information about their experiences and views about facilitating the teaching process using WhatsApp (Creswell, 2014).

3.5.2. Site

This site of this research was the only urban UoT in the province. The mission of this particular South African UoT is to be: "At the heart of technology education and innovation in Africa".

This study was conducted at the Faculty of Education where undergraduate students are being trained to be primary and high school teachers. The Faculty offers post-graduate studies where the researcher completed his Honours degree in 2017 and where he is currently a Masters student. This particular UoT was selected because of its accessibility, convenience and history to the researcher. Etikan, Musa and Alkassim

(2016) postulate that 'convenience sampling' is a type of non-random sampling which is suitable for selecting targeted participants or sites.

The researcher did not need to allocate too much time or money for transport to access his data. The students and lecturers were available after lecturing hours. Since the researcher was a previous student in this Faculty, he was familiar with the campus and library and able to host his focus group interviews in lecture rooms that were familiar to both the students, lecturers and himself. This indicates the accessibility and convenience of using this site for his data collection (Etikan et al., 2016).

3.5.3. DATA COLLECTION INSTRUMENTS

3.5.3.1. Interviews

Kvale and Brinkmann (2009: 2) define interviews as questions and answers, conversations, or an "inter-change of views between two persons conversing about a theme of mutual interest". Interviews are one of the crucial sources of case study information (Yin, 2009) which this study employed. Semi-structured, open-ended interviews were conducted to collect data from the two lecturers (Appendix 1) and focus group interviews were held with sixteen students (Appendix 2).

Semi-Structured Interviews

Semi-structured interviews were used to solicit information from the two lecturers' points of view about how they utilised WhatsApp and the challenges they were experiencing in their teaching and learning. Semi-structure interviews were crucial to this research study, and refer to the capacity of interviews to produce data on the views of respondents rather than the researchers dictating the direction of respondents; as is often the case with structured interviews (Flick, 2014). The lecturers in this study provided comprehensive information about the study. Probing questions were asked to obtain rich and meaningful data (Leavy, 2017). Tracy (2019: 132) states that "Interviews elucidate subjectively lived experiences and viewpoints from the respondents' perspective". This corresponds exactly with the aims of this research project: to explore the views and experiences of the lectures who were using WhatsApp as a teaching and learning tool.

These semi-structured interviews were conducted in the lecturers' offices during times suitable to them. The reason for selecting lecturers was because they design and facilitate their teaching on the WhatsApp group. They were on the group chat as moderators and supervisors of students.

Focus Group Interviews

Students were chosen to participate in focus group interviews. Dilshad and Latif (2013) state that focus group interviews consist of a small group of people, usually between six and nine in number. In this research study, the two groups consisted of eight students each, which is consistent with the required number of focus group participants. Focus-group interviews took place in the classrooms at the UoT.

Focus group interviews assisted the researcher to generate a rich understanding of students' opinions about the utilisation of WhatsApp. They were chosen because they allowed participants to discuss issues amongst each other. Focus group interviews provided more detailed information compared to a one-on-one interview (Marshall & Roosman, 2016). As reported by Neuman (2014) interviews allow participants the freedom to provide any answer they want to the question posed by the researcher, and offer a higher response rate. The students had an opportunity to speak honestly about the subject under investigation; it was not easy for students to lie or provide incorrect information during the focus group interview since other participants could correct, disagree or agree with the views or facts shared. All the interviews took approximately 60 minutes each. Table 3.2 provides the interview schedules for both lecturers and students.

Table 3.2 Interview schedule

	Interview Lecturer 1	Interview Lecturer 2	Focus group interviews with students Group 1	Focus group interviews with students Group 2
Date	14/05/2018	18/05/2018	21/05/2018	04/06/2018
Time	15:00-16:00	15:00-16:00	11:00-13:00	15:30: 16:30
Venue	Office	Office	Classroom	Classroom
Instrument used:	Voice recorder	Voice recorder	Voice recorder	Voice recorder

Students and lecturers voices were recorded using a voice recorder (Merriam, 2009). Recording the interview is the most common way to keep the actual data. Recording assisted the researcher in that as all information recorded from both lecturers and students was saved for analysis. Recordings offered an opportunity for the interviewer to listen to his interviews and improved his questioning style (Merriam, 2009). The researcher learned to listen carefully to the structure of his language, it helped him keep an open mind, and it helped him to realise that he needed to repeat certain statements to clarify what the speaker was saying.

The researcher transcribed the collected data from lecturers and students. "Transcribing interviews is a tedious and time-consuming project" (Neuman, 2014:110). This was experienced by the researcher. It took two weeks to transcribe all the data. There were multiple speakers in the focus group interviews and interviews with lecturers. The transcriptions from both students and lectures were returned to them to check that their voices were correctly and accurately captured (Coe, 2012).

Advantages of interviews

Leavy (2017) elucidates that the advantage of an interview is that it offers a chance to create a rapport, pick up on visual cues and the use of gestures. This happened during the interview process of this research project. The researcher created a rapport with the participants which promoted an open communication and allowed students and lecturers to freely share their experiencing of using WhatsApp as an educational tool. Participants were able to express their ideas and experiences of using WhatsApp as an educational tool by the use of gestures which assisted the researcher to understand their feelings about the subject under investigation (Leavy, 2017).

Disadvantages of interviews

Personal interviews and focus group interviews require time and preparation from the researcher; unlike questionnaires where you do not need to interact personally with the participants for a long time (Mears, 2012). This difficulty was manifest in this study since some of the interviews exceeded the time planned by the researcher. Another disadvantage experienced by the researcher was that sometimes time was wasted. Some of the participants were not available on the time and date agreed with the researcher. Some cancelled the meeting at the last minute. These difficulties negatively affected the time of the participants who were available (Palinkas, Horwitz,

Green, Wisdom, Duan & Hoagwood, 2015). Yin (2009:102) reveals the ineffectiveness of using interviews when “inaccuracies due to poor recall, flexibility-interviewee gives what interview wants to hear, bias due to poorly articulated questions”. The inaccuracy due to poor recall was experienced by the researcher during the focus-group interview with students in some questions that required them to critically think and recall information.

3.5.3.2. Documentary Data Collection

As claimed by Leavy (2017:146) “content analysis or document analysis is a method for systematically investigating texts”. The analysis of WhatsApp screenshot for students and lecturers’ conversations offered the researcher detailed information about their experience of using WhatsApp as an education tool at the UoT. The researcher asked students and lecturers to take screenshots of WhatsApp class group chats.

Documents are easily accessible, free, and contain information that would take an investigator an enormous amount of time and effort to gather otherwise (Merriam, 2009:173). It took a day for the researcher to access the WhatsApp screenshots which were free of charge. These screenshots contained rich information about the subject under investigation.

Documents can be studied repeatedly: they contain the names, references and information of an event (Yin, 2009). This was the greatest benefit of taking a WhatsApp screenshot. The researcher read the original screenshot repeatedly to make meaning. All students’ and lecturers’ names were available on the group chat although it was not revealed by the researcher to ensure the anonymity and confidentiality of the participants. Creswell (2015) stated that documents offer accurate data because participants would have given thought into compiling them. The screenshots that were taken by the researcher offered accurate, detailed and thoughtful data. A disadvantage experienced by the researcher was that not all conversations were available on screenshots: some information had to be deleted to free up space.

3.6. DATA ANALYSIS

Qualitative data analysis is a continuous process during a research study. Analysis includes examining participant data. Researchers normally use a variety of analysis

steps and within a specific design (Creswell, 2014). Data analysis in qualitative research is an ongoing process where the researcher deeply analyses the collected data by trying to make sense of the information collected (Schurink, Fouche & De Vos, 2011). “Data analysis in qualitative research will proceed hand-in-hand with other parts of developing the qualitative study, namely, the data collection and the write-up of findings” (Creswell, 2014:195). Qualitative data analysis is a challenging stage of research (Tracy, 2019).

Before beginning the data analysis process, the data from the students’ focus group interviews were recorded in isiXhosa, as stated by the students. The researcher translated the isiXhosa words into English. This translation ensured the authenticity and reliability of the data. The researcher organised all the data received from the participants; this included the two face-to-face interviews with the lecturers and the two focus group interviews with the students. At an early stage in the analysis process, researchers typically organize their data into computer files (Creswell, 2013: 8). Similarly, the researcher moved all his data from voice recordings to computer files, this was done to ensure the safety of the data collected and to make sure that it was not lost (Creswell, 2013: 8).

The next step was transcribing the texts into Word documents. The researcher listened to the recorded data from the interviews and focus group interviews and translated it, verbatim, into words (Creswell, 2013). The researcher recorded every word while he was listening (Taylor, Bogdan & DeVault, 2015). These data were arranged according to the instruments used to collect it. First, lecturers interviews were interpreted; then students focus group interviews followed. The researcher typed while listening to the voice recorder. He read the recorded/typed data multiple times and corrected some of the incorrectly typed words.

The researcher started reading and re-reading all the collected data from both groups of participants to make meaning of all the data, in order to deeply understand more about the utilization of WhatsApp for teaching and learning in an initial teacher preparation programme at a UoT. The theoretical framework that guided this study was the Community of Inquiry (CoI) as discussed by Garrison, Anderson and Archer (2010) in Chapter 2 of this thesis. Their three elements were used to deductively analyse (Flick, 2018) and code the data in different colours, for example: cognitive presence

(statements were highlighted in yellow), social presence (statements were highlighted in green) and teacher presence (statements were highlighted in blue) and these became the codes. These codes are labels allocated to some related information. Henning et al. (2004) view this process of coding as grouping and labelling interrelated texts in which themes develop. When answering the four sub-research questions, the researcher further inductively analysed the coded data into smaller and meaningful units (Henning et al., 2004) and these became themes.

3.7. TRUSTWORTHINESS

Shenton (2004) argues that taking time to explain to the participants why it is important for them to take part in a research project enhances trustworthiness. All participants were informed about the vital role of participating in this research project before they participated. This increased the trustworthiness of this study (Shenton, 2004). Credibility and transferability, validity, reliability and triangulation was observed to ensure the trustworthiness of this study.

3.7.1. Credibility and Transferability

Korstjens and Moser (2018: 121) defined credibility as the “confidence that can be placed in the truth of the research findings. Credibility establishes whether the research findings represent plausible information drawn from the participants’ original data and is a correct interpretation of the participants’ original views” Strategies to ensure credibility are prolonged engagement, persistent observation, triangulation and member check (Korstjens & Moser 2018). Probing questions assisted in generating rich information to ensure the credibility of findings. “Transferability is not just the behaviour and experiences, but their context as well, so that the behaviour and experiences become meaningful to an outsider” (Korstjens & Moser 2018: 121). In this study project, the use of documentary analysis (WhatsApp screenshots) clear made the context of this research meaningful as it indicated the originality of the study. Korstjens and Moser (2018) stated that transferability is the way in which the findings in qualitative studies can be transferred to other contexts or settings with other participants or respondents. This studies context is higher education in an UoT, however this study could be transferred to the context of high schools where teachers and learners become participants.

3.7.2. Validity

Yin (2011:78) postulates that “a valid study is one that has properly collected and interpreted its data, so that the conclusions accurately reflect and represent the real world that was studied.” Validity assists to maintain trustworthiness, of the findings (Neuman, 2014).

To achieve validity in this research study, and to show that the findings accurately reflected the truth, the findings from the participants were critically analysed and read extensively by the researcher. This helped the researcher to select only valid information from the interviews and focus group discussions. Participants who were involved in this study were knowledgeable about utilisation of WhatsApp as an educational tool. This ensured the validity of the findings in this research project. Probing questions were posed as one of the strategies to gain valid reliable information from participants. The researcher employed more than one data collection instrument: documentary review, semi-structured interviews and focus group interviews which is called triangulation. This ensured the validity of study. Member checking was utilised in this research project: all participants were allowed to check that their voices, experiences were presented correctly. Participants confirmed that their experiences were accurately recorded. This assisted the researcher to avoid bias and it helped to confirm the validity of the findings.

3.7.3. Reliability

Leavy (2017:113) illustrated that “reliability refers to the consistency of results”. Qualitative research should produce stable, quality and reliable results even if any scholar would like to conduct a similar study. Reliability refers to studies that can be reproduced exactly the same way regardless of who is conducting the investigation (Tracy, 2019).

In order to achieve ‘stable, quality and reliable’ results in this study, the findings obtained from students were collected from focus group interviews with the students and semi-structured interviews with the lecturers using the same interview schedules and probing questions and all were afforded the same amount of time for the interviews. Since the data were recorded verbatim, the researcher was more able to

remain unbiased during the data analysis process. This process resulted in a reliable research project and substantial findings.

3.7.4. Triangulation

Cohen et al. (2007: 142) share six types of triangulation which are briefly discussed. The final paragraph explains those types of triangulation that were relevant to this particular research study.

Time triangulation refers to aspects of change over long periods of time. *Space triangulation* encourages studies in the same country and cross-cultural research. *Combined levels of triangulation* use more than one level of analysis namely, the individual level, the interactive level (groups), and larger levels including organisations, cultures and societies. *Theoretical triangulation* refers to more than one theoretical viewpoint. *Investigator triangulation* involves having more than one observer. *Methodological triangulation* is using both the same method on different occasions, or different methods on the same occasion.

In this research project, the researcher used two types of triangulation. *Space triangulation* was achieved by the researcher as he selected diverse participants in terms of race and culture. Coloured, isiXhosa and White students were chosen to participate in this study and this created a broader outlook as the participants offered different worldviews. *Methodological triangulation* was obtained by using two different methods of data collection; one-on-one interviews and focus group discussions.

3.8. ETHICAL CONSIDERATIONS

Creswell (2014: 132) states that “with the process of research, the ethical issues occur prior to conducting the study; beginning a study; during data collection and data analysis; and in reporting, sharing, and storing the data”. This statement is true for this research project as ethical issues were observed throughout the research process, especially as it involved students and lecturers.

Ethical issues in this study were observed in the following ways:

Prior to conducting the study, the researcher obtained an Ethical Clearance Certificate from the university prior to commencing data collection as can be seen in Appendix 3 and the number that was given to the researcher was: EFEC 2-2/2018. Beginning the study, the researcher explained the purpose of the study to all the participants. The sixteen students and two lecturers were given a Letter of Consent requesting them to read the details about the study, and when they signed the form this indicated to the researcher, that they fully understood their participation in the study and that they accepted to take part in this research (Appendices 4 and 5). All participants were informed that participation was purely voluntary. Participants were assured they could freely withdraw from the study at any point in time (Cohen et al., 2007).

During data collection and data analysis, confidentiality was maintained by using the following pseudonyms: “students”, “Lecturer A” and “Lecturer B”. The name of the institution where this study was conducted was not revealed but it was indicated as a UoT. The pseudonyms used in this study assisted the researcher to maintain the privacy of participants throughout (Lapan et al., 2012). Students and lecturer’s names and contact numbers, on the WhatsApp group chat, were shaded in black to ensure anonymity. Reporting, sharing and storing the data, data was stored in the following ways: hard copies were carefully kept in files and locked in a cabinet in the researcher’s classroom. Soft copies of the interviews and focus group discussions were saved on the researcher’s computer on google drive. The completed thesis will be stored in the UoT’s library repository.

Throughout the study, the researcher was aware of issues of bias and power (Creswell, 2012: 401). To avoid the issue of bias, the students and lecturers were granted the opportunity to check their recorded and transcribed information. Using the exact screen shots of the group chats on WhatsApp group reduced the issue of presenting unbiased data (Lapan et al., 2012). To avoid the issue of power amongst the participants, all respondents were given an equal opportunity and time to express themselves during the focus group interviews and personal interviews about the subject under investigation (Leavy, 2017; Neuman, 2014).

Cohen et al., (2007:151) proposed a few suggestions for avoiding issues of bias during interviews, which the researcher took note of such as:

Biased sampling: the researcher followed the criterion sampling instructions in order to avoid biased sampling. This assisted the researcher to select only participants who met the criteria to participate in this study and to avoid bias of selecting certain participants.

Rapport between interviewer and interviewee: King and Horrocks (2010) state that rapport between interviewer and interviewee is vital; it helps to create trust and allows participants to freely express themselves openly. The researcher warmly welcomed all participants and created a comfortable relation with them before he began the process of collecting data. During the interviews, participants were addressed by their names as the researcher was already familiar with them. Participants were not interrupted while speaking and eye-contact was maintained by the researcher. By being aware of these issues, the researcher developed trust and created a comfortable rapport between the researcher and his participants.

Changes to question wording for example in factual questions: The researcher used the same interview schedule throughout the data collection process and did not change any questions. There were no factual questions: participants were encouraged to elaborate and support their answers.

Prompting and biased probing: The researcher asked prompting and probing questions based on the participants' responses not on what he wanted to hear.

Handling of challenging questions: All questions that were asked by the researcher were easily understood by the participants. They were given opportunities to ask questions if they misunderstood or were unclear of the questions asked during the interview.

Selective recording of data or transcripts: All collected data were recorded and transcribed as it all played a vital role in this study.

3.9. CHAPTER SUMMARY

This chapter set out the research paradigm, the research approach and design. The methodology used to conduct this study included a discussion of the sample, site, data

collection instruments. Discussions were included on how data analysis, trustworthiness including: validity, reliability and triangulation were applied in this study. The various ways in which the ethical considerations were observed in this study are described. The next chapter focuses on presenting the findings and the discussions of this study.

CHAPTER 4

RESULTS

4.1. INTRODUCTION

The previous chapter presented the research design and methods used in this study. This chapter sets out the findings and discussion surrounding the data collected, to answer the main research question and sub-research questions. The main research question is:

How do lecturers and students utilise WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology in South Africa?"

The four research questions are:

- 4.1.1. *How is WhatsApp used as a communication tool in an initial teacher preparation programme at a University of Technology in South Africa?*
- 4.1.2. *How is WhatsApp used as an educational tool in an initial teacher preparation programme at a University of Technology in South Africa?*
- 4.1.3. *What are students' preferences of WhatsApp to using Blackboard?*
- 4.1.4. *What are the challenges of using WhatsApp in an initial teacher preparation programme at a University of Technology in South Africa?*

The data are presented according to each sub-research question. The discussion of this chapter is guided by the theoretical framework of Col. All names in the WhatsApp Figures have been blocked out for ethical purposes; keeping the names of the students and lecturers anonymous.

4.2. RESEARCH QUESTION 1

How is WhatsApp used as a communication tool in an initial teacher preparation programme at a University of Technology (UoT) in South Africa?

To answer the first research question, four sub-themes are presented and discussed:

- WhatsApp as an accessible tool
- WhatsApp as affordability
- As a reminding tool

- As information sharing

4.2.1.1. WhatsApp as an accessible tool:

Sayan (2016) states that WhatsApp is accessible to all Smartphones in South Africa, giving students a better chance of using the application for academic communication purposes. Manan (2017) concurs that WhatsApp helps in reducing the cost of photocopying assignments and lecture materials. WhatsApp is easily accessible to students who cannot afford to buy advanced smartphones.

Sivakumar (2016: 15) states that messages sent via WhatsApp are retrievable even when students were offline, outside network coverage, or when their devices were switched off. Sivakumar (2016: 15) that this element of retrievability allows students to participate in learning at any time, irrespective of context. In this sense WhatsApp is uniquely suited as a pedagogical device.

Both students and lecturers agreed in this project that WhatsApp was a platform that provided easy access to information. It is used to communicate course related information, for example, if the class is cancelled or the venue has been changed. WhatsApp created connections among students; especially those who live far apart. For example, two students in this project stated that:

WhatsApp is easy to use to transfer information as everyone can have access to information sent by lecturers.

I find it effective as a university student as it creates connections among students since they live in different places.

Lecturer A explained how he uses WhatsApp for communication stating:

I can post on WhatsApp and announce that the following students must urgently contact me.

Lecturer B supported the view that WhatsApp is easily accessible claiming:

Look I use WhatsApp because it is accessible. I use it because many students are able to access it regularly.

The accessibility of WhatsApp makes communication easier between lecturers and students and between students. Due to the accessibility of WhatsApp, students use it

to discuss some social issues (Bouhnik & Deshen, 2014). The usage of WhatsApp fits the social presence in the theory of Col. Kreijns, Van Acker, Vermeulen and Van Buuren (2014:5) define social presence as:

... associated with the degree of participation and social interaction amongst the collaborative group members and, as such, is therefore considered a critical variable for learning.

Within the social presence, there are three categories: “affective, open communication and cohesion” (Garrison & Arbaugh, 2007: 162). Since there is evidence from interviews in this research project of the three constructs of Col’s social presence, it is an applicable framework for “understanding how deep and meaningful learning can be achieved” using WhatsApp.

Through communication on WhatsApp, more students established friendships. Some of these students remained WhatsApp friends; especially those students who lived far from each other and had few chances to meet with one another. Mwakapina, et al. (2016) found that similar conditions pertained in their study. This correlation between the findings of this project and another, substantiates the ‘affective’ category of social presence. ‘Open communication’ is another category of social presence. The following phrases, provided by students in this project provide evidence of this phenomenon:

WhatsApp is easy to use to transfer information as everyone can have access to information sent by lecturers.

WhatsApp is effective as students can send a voice note explaining something in your local language and that makes it easy for us to understand.

‘Cohesion’ is the final category of ‘social presence’ and it can be found in the following phrase by a student:

Yho! We have so much work that sometimes we forget things, and then the class representatives can remind us using WhatsApp.

This is a case of ‘social cohesion’: class representatives use WhatsApp to increase the accessibility of information. Some lecturers communicated directly with class representatives to send information on the WhatsApp group.

4.2.1.1.1. Affordability

WhatsApp can be used as a tool for distance learning. Lecturers facilitate teaching without the physical presence of students in a classroom (Newby, Stepich, Lehman & Russell, 2000). Students benefit from this type of education since they are not required to pay transport fees to travel to campus. They can afford to use WhatsApp for learning. In this sense WhatsApp plays an important role in compensating for the injustice of the past. WhatsApp allows students to attain their learning goals at an affordable rate.

In this project there were no comments from the lecturers about this sub-theme 'affordability'. Many students, however, commented on this issue:

It is effective because we spend a lot of hours on phones and it makes it easy for most of us travelling to campus. We do not need to do that because one can just be on the phone at home or university residence learning without incurring traveling costs.

WhatsApp helps to communicate urgently and it is easy to use and cheap (not that costly).

WhatsApp does not cost much on data and it is easy to communicate with fellow students.

The cost effectiveness of WhatsApp is an important element in the context of general poverty in the country. The views of students about cost effectiveness of WhatsApp belong under the topic of social presence. Garrison, Cleveland-Innes and Fung (2004) define social presence as an affective expression: learners share personal expressions of emotion, feelings, beliefs, and values. In this project in South Africa, students shared their experiences and showed that they believed and felt that WhatsApp was a form of cost effective social media for them.

The findings about cost effectiveness of WhatsApp are similar to what Tawiah, Nondzor and Alhaji (2014) found: that students enjoyed to be on WhatsApp since it costs less. Similarly, in the context of Pakistan, Mahesar and Memon (2017: 16) state that "the inexpensiveness of this application places WhatsApp as a great and cheap alternative to Short Message Service (SMS) messaging." WhatsApp is a cost effective means of communication among university students (Maeder, Ho & Marcelo, 2016). The fact that students were openly expressing themselves about the way they feel

about the cost of WhatsApp resorts under 'open communication', a category of social presence.

4.2.1.1.2. Reminding tool

This study found that students used WhatsApp as a reminding tool for several purposes such as informing colleagues of:

- Deadlines
- Examination venues
- Resources to bring in classroom
- The role of class representatives

According to Dyavarishetty and Patil (2017: 2567) "several reminders were given to the students' every time reminding them about the deadlines for submission." Alenazi's (2017) study states that students use WhatsApp to remind each other about schoolwork. One student in this project at a South African university of technology agreed that WhatsApp was used for communication purposes, particularly as a reminding tool. Another student stated that "WhatsApp is more like a reminder it is not like other social media such as Skype and Facebook you can do everything on [WhatsApp] to remind you and to guide you." These findings are consistent with the results presented by Robles, Guerrero, Linas and Montero (2019) who postulate that WhatsApp is an effective tool which students deploy to remind each other about details of university work.

Another student agreed that WhatsApp is a useful social media to glean information about the venues. She added that the application was a good reminding tool:

My experience with WhatsApp is that it is useful for me, let us say there is a date for submission of an assignment that I forget and someone would remind me especially our Blackboard tests that is due for this day or to venues for examination and it is helpful because if you do not know where the venue is you can ask on WhatsApp group in which venue we are writing and then they can help you to allocate that.

The role of class representatives is critical amongst students. They work directly with their lectures and share the knowledge of due dates, venue changes, resources to

bring to class. Lecturers observe the communication among students and supervise the communication process (Mbukusa, 2018). Some students stated that:

... our class representatives can also remind us about due dates via WhatsApp.

Our class representative can also remind us about due dates.

Class representatives gets information from lecturers and send it to student groups.

Two lecturers shared their experiences of using WhatsApp as a reminding tool. Rambe and Bere (2013) state that WhatsApp is a crucial social media in South African higher education since lecturers use it to communicate with all students. Naidoo and Kopung (2020) concur that WhatsApp instant messaging allows students to communicate, regardless of their location.

Lecturer A stated that: "I use it in many ways to communicate information to my students, sometimes it can be informal like please do not forget we have a lecture tomorrow or please bring this to the class tomorrow."

Lecturer B stated: "I use WhatsApp to reach students and remind them about the crucial work that needs to be done."

The value of WhatsApp as a reminding tool relates to social and cognitive presences detailed in Col. Kreijns et al. (2014: 7) states that a "social presence is important because it functions as a support for cognitive presence, indirectly facilitating the process of critical thinking carried on by the community of learners." In this research project, the role of the class representatives was important since it enabled "participation and social interaction which are necessary for effective collaboration and knowledge construction." A cognitive presence involves the extent to which students are able to use their critical thinking skills to construct meaning and was "intimately connected to the learning context" (Garrison et al., 2010: 7). Students drew upon their memory skills, one of the chief cognitive skills, to remind others about school work such as submission deadlines and examination venues.

4.2.1.1.3. Information sharing

Both students and lecturers unanimously agreed that WhatsApp is ideal as a communication tool which they were employing for that purpose. Students utilise WhatsApp to receive information communicated to them such as announcements, discuss work with classmates, seek help from other students and lecturers, to form WhatsApp group to study and arrange meetings with classmates and lecturers (Gasaymeh, 2017). Susilo (2014) state that WhatsApp assists students in sharing the learning resources and to answer their questions about school work such as: due dates and assignment details. Students rely upon WhatsApp to receive information communicated to them such as announcements, and discussion of work with classmates.

From the focus group discussions with students and their open-ended questionnaires, students' comments substantiated with the theoretical concept of social presence described in Col social presence, particularly the open communication category: WhatsApp is an important tool for sharing information , as can be seen from the following excerpts:

A student who completed the questionnaire said "Sometimes when times for a lecture is changed or when a lecture is cancelled, it is easy to get information.

One student who filled a questionnaire said, "I have been using WhatsApp during my studies and it is helpful because it is easy for me to get information from other students especially when I need something urgently to use for my study.

It is easy to communicate and response is fast as most of the people are always on WhatsApp for their personal issues. Things which are posted on WhatsApp for learning are understandable and short, lecturer can also maintain communication with students and we can also use Wi-Fi instead of using data.

In Tanzania, WhatsApp is used as a communication tool in several ways. Students use the group to communicate study problems and solutions, availability of lecturers and other announcements (Mazana, 2018). Alenazil (2017: 4) states that "I have a WhatsApp group for almost every class, but I only use it to communicate with my classmates. We share information about the course for example, if I miss a class I post

a question in the group and my classmates will provide me with the topics discussed, materials, homework assigned that day, and or updates.”

According to Gasaymeh (2017:5) students use WhatsApp to communicate for different purposes:

To organize meetings with my classmates regarding the assignment and projects required by the instructors, build good relationships with the instructors, to get feedback from course instructors, communicate with my classmates about matters related to courses requirements such as submission dates of assignments.

Nanda (2019) agrees that WhatsApp plays a pivotal role to assist slow learners by creating their interest and developing communication among students.

In Namibia, WhatsApp is used by lecturers to share learning resources on group chat and send announcements. Students employ WhatsApp to arrange personal meetings with group members (Ujakpa, Heukelman, Lazarus, Neiss & Rukanda, 2018). There was only one example from a lecturer whose comment links to the notion of social presence in Col; the open communication category where he claimed that:

with WhatsApp, I can get hold of students instantly and we can just communicate as easy as we want about work or about other problems that they may be experiencing.

Within the social presence category of “group cohesion” there were two different responses from students:

Let us say for example you were not in class and then you obviously have numbers from group chats surely you are going to take one number of the student and ask him/her to help you with information. WhatsApp is useful because you get information fast and then you communicate with students and lecturers fast. If I do not want to attend classes I can communicate with those students and ask what was happening in class and I can get everything for example assignment and notes.

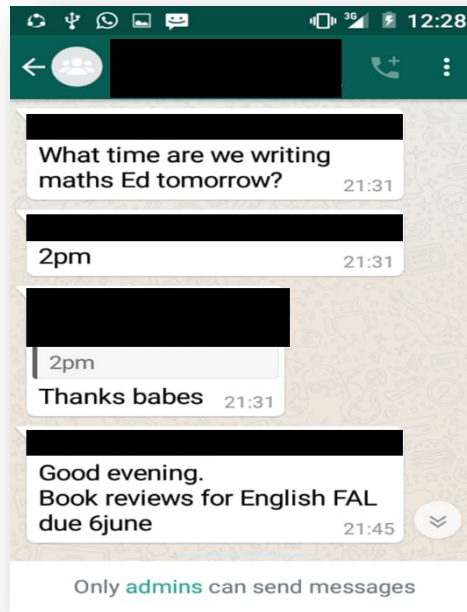


Figure 4.1 An example of the social presence where students are communicating with each other (Source: The researchers cell phone)

The findings about the suitability of utilising WhatsApp especially if one was absent, is supported by Akakandelwa, Moonga, and Changala (2018) elucidate that in Zambia, WhatsApp is utilised to inform students about the absence or presence of lecturers, and share school work such as projects, homework and assignments, timetables and notices. In terms of cognitive presence there was only one example from a lecturer who sent a message to his students to organise his class while he was away.

Findings from Figure 2 about the lecturer who is still not in a fit state to return to work corresponds with findings mentioned by Bouhnik and Deshden (2014), who contend that students and lecturers use WhatsApp group for communication in various ways; they used the group to communicate issues regarding coursework problems, availability of the lectures. In Zambia WhatsApp is valued by lecturers as an effective way to inform students about the absence or presence of lecturers, sharing school work such as projects, homework and assignments, timetables and notices.

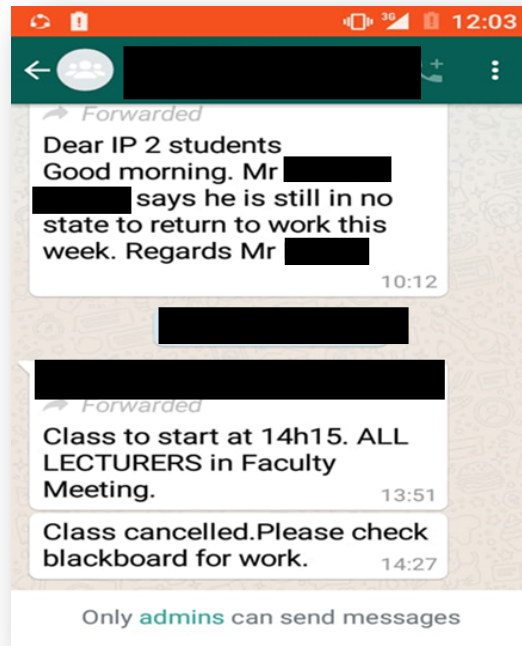


Figure 4.2 A lecturer communicating with his students – this is an example of teaching presence particularly organisation. (Source: The researchers cell phone)

Ujakpa et al. (2018) confirm that WhatsApp is a useful social media platform which improves communication among students themselves and with lecturers. Findings from this study concur with literature from different contexts which supports the view that WhatsApp is an ideal tool that can be used to enhance communication among students and lecturers in different courses.

These findings relate to key aspects of Col in terms of social and teaching presences where WhatsApp is used as an information sharing tool with the students' peers and for educational purposes.

4.3. RESEARCH QUESTION 2

How is WhatsApp used as an educational tool in an initial teacher preparation programme at a University of Technology in South Africa?

To answer this second Research Question two main themes with various sub-themes became evident and they include:

- 4.3.1.1 WhatsApp as a learning tool:
- a. Enhancing learning experiences;
 - b. Collaborative learning;
 - c. Developing English skills;
 - d. Developing self-confidence from asking question; and
 - e. Facilitate distance learning.

- 4.3.1.2 WhatsApp as a teaching tool:
- a. Using WhatsApp as a teaching tool to facilitate teaching and learning;
 - b. Using WhatsApp as a teaching tool to organize the lecturers' and students' academic lives during strikes;
 - c. Using WhatsApp as a teaching tool to hold discussions with the lecturers.

4.3.1.1. WhatsApp as a learning tool

This study found that WhatsApp could be beneficially deployed as a learning tool to enhance learning experiences, and facilitate: collaborative learning, group work and social skills, English language skills, curiosity, self-confidence and distance learning. Each of these aspects is discussed in more detail.

a. Enhancing learning experiences

This study found that WhatsApp enhanced students' many varied learning experiences. One student reported in the focus group interview, that as a result of using WhatsApp, she was able to gain guidance and support from her lecturers on assessments and projects that they were working on. The same student continued:

Let us say you are writing a research proposal and you encounter a problem with the design phase, you can ask a lecturer who is continuously there to help you. Basically it [WhatsApp] helps you with your assignments especially if the lecturer is involved. You are able to communicate with that lecturer through the whole assignment or proposal.

Another student noted the importance of interacting with lecturers as a great benefit of using WhatsApp: "I stay in contact with lecturers and you do not have to personally visit lecturers in their offices, you can just drop them a message and they will respond." The fact that students were interacting with their lecturers on WhatsApp, underscores

the aspect of teacher presence cited in Col; particularly the category of 'facilitating discourse' and the indicator 'sharing personal meaning'. According to Garrison and Arbaugh (2007: 164) a teaching presence of 'facilitating discourse' is encouraged when there is "... contact between students and faculty and reciprocity and cooperation among student" and 'sharing meaning". They state that a teaching presence supports the "...importance of participant interaction in online learning effectiveness".

Three students commented, during the interviews and by completing the questionnaire, on how using WhatsApp assisted them to learn better and become familiar with a variety of learning styles. Arbuthnott and Kratzig (2015: 2) claim that: "learning styles theory is that we differ from each other in learning abilities and preferences, and that matching these preferences with instructional methods and learning environments greatly improves student learning." In support of this view, three students in this South African project commented:

It is effective, for me specifically as I learn better by seeing not only explanations but visual images and videos too.

WhatsApp is effective because I learn better when I am on my phone and I can see it anytime, especially receiving notes and documents from peers on work done in class unlike in the classroom.

As students we learn through different styles and pace so creating audio lesson that can be sent directly to students, send graphics such as pictures or any educational resources that can be helpful to students.

Using WhatsApp as a learning resource was mentioned by one student and the researcher himself. They reported that using WhatsApp was an important tool for sharing learning resources. Bouhnik and Deshen (2014: 217) state that "WhatsApp was used for communicating with students, nurturing the social atmosphere; creating dialogue and encouraging sharing among students; and as a learning tool".

A student reported during the focus group interview that:

I think it is important to touch on the fact that WhatsApp allows us to have those tools of PowerPoint, Excel and so whenever your specific document that you want you can share it with students. WhatsApp facilities helps to improve learning experiences and everyone can access the learning resources that are shared on WhatsApp.

The researcher took a screen shot (Figure 4.3) of a discussion in the WhatsApp group where a student uploaded and shared a copy of the CAPS (2011) document.

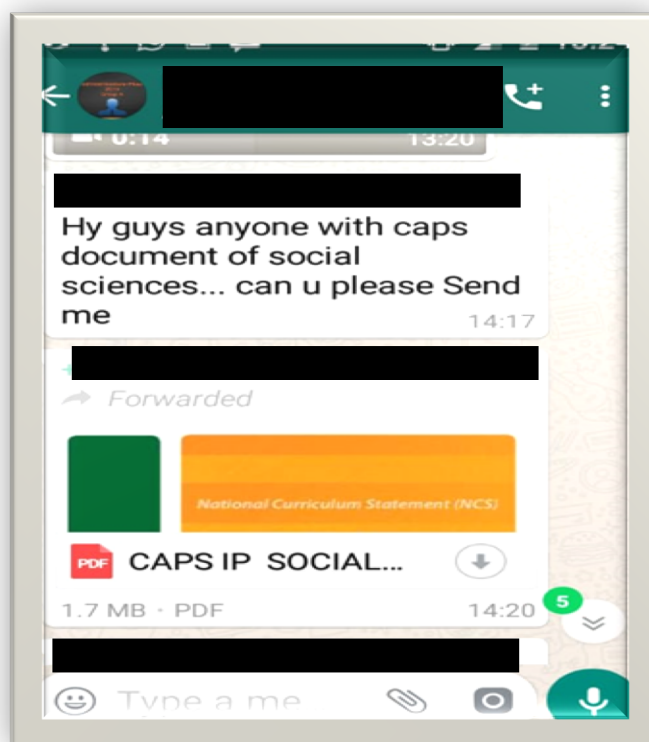


Figure 4.3 Sharing educational resources (Source: The researchers cell phone)

The final example of enhancing students learning experiences came from a student who revealed that she found WhatsApp enabled her to prepare better for her examination. She claimed that:

I would say it helps a lot when it comes to preparing for tests because we get scopes [a written information with content that is given to students to study in preparation for examination] in the group chat.

Although there were no findings from this research study about using WhatsApp for formal assessments, students, however, concurred that they use WhatsApp as a preparation tool for formal assessments. This suggests that a formal examination cannot take place on WhatsApp although this social media platform can be used as preparation for formal assessments. Lecturers use online formative assessments to assess students. They use WhatsApp to send subject notes, worked-out solutions and past examination question papers to students (Dzvapatsva, Mitrovic & Dietrich, 2014). This gives students an opportunity to engage with texts in preparation for assessments.

Srivastava and Baleni (2015) state that WhatsApp is a useful tool for assessment in higher education.

b. Collaborative learning

Armellini and De Stefani (2016: 1203) state that both a teaching presence and a cognitive presence have ‘become social’ and that the social presence is the “major lever for engagement in Col activity, sense-making and peer support”. This view is supported by Jan, Ullah, Ali and Khan (2016: 675) who state that “student’s engagement in mobile learning appears to encourage independent and collaborative learning experiences.” This point is reflected in the response from one student in the focus group discussion who mentioned that WhatsApp was useful for collaborative learning:

WhatsApp for me is effective when it comes to group work. We discuss the topic on WhatsApp and complete the whole assignment and submit. Before submission, we meet to make touch ups, but the assignment will have been completed through discussion on WhatsApp. If you have something you do not understand, you send it to the group. We read and explain and come to a conclusion, basically that is how we do it.

Akintola (2017) states that WhatsApp is a favourite learning tool among students because it enables them to learn collaboratively. Chaka and Govender (2017) concur that Nigerian students have positive attitudes towards using WhatsApp in education since it enables them to co-operate and work as a team. Manan (2017) argues that WhatsApp groups help to create a collaborative discussion among students to develop a better understanding of their assignments.

Rambe and Chipunza (2013) reiterate that in South Africa students manage to have rich, and effective collaborative discussions when utilising WhatsApp on group chat. Three students in this study praised WhatsApp for making group work tasks easy and effective by stating that:

WhatsApp has an impact when completing group work task. It helps when everyone in the group has the same mind-set of completing the educational task. WhatsApp is effective when you are working on the same assignment for instance you are doing a

research proposal as a group, you divide the work according to the components of the proposal. You will have someone working on introduction, the other one will be working on literature review and the other one will be dealing with methodology. When everyone is done with their sections, they can just send you and you have one document. Let us say you are chasing a deadline of 12pm and all group members are in different places, all the work can be done timeously using WhatsApp.

It is effective because if we have been given a group assignment we can also do our sub-groups so that we can discuss our group work outside the main class group.

Back in the days we used to meet in group to study or do group assignments but today it is easy to just create a group and learn through WhatsApp.

Kiran (2018) states that WhatsApp group features allow users to collaborate across geographical boundaries, irrespective of different geographical features. This facility makes studying easy and effective for students. This was evident in this study where students asserted that they can learn even at home. One student stated that: "I do not have to be face-to-face in order to discuss with a person and I can do it from anywhere and all I need is a cell phone." Another student commented in the focus group interview, that WhatsApp created collaborative learning opportunities saying that: "Everyone is always present regardless of where they stay. Meetings up take a lot of time and you will also find that some people are always absent due to transport issue." Rogers and Lea (2005) state that students can learn anywhere, which corroborates aspects of a social presence: nonverbal communication cues such as body language, physical presence and voice projection do not prevent social presence. This makes it easy for students to learn on WhatsApp without worrying about body language, eye contact, and physical presence.

Jan et al. (2016) state that collaborative education can occur on social media and that it plays a crucial role in assisting students to work together to finish a collective objective. This is related to this study where lecturers and students have an online learning community (WhatsApp) which they use to achieve educational goals. Armellini and De Stefani (2015: 1205) that "In the digital age, the social aspects of the educational process have become an essential component in the educational experience, to the extent that learners themselves can at times become instructors."

Two students, who commented on the open-ended questionnaire, praised WhatsApp for allowing them to further discuss the work that was done in class and instruct each other:

I like the fact that most of my notes I am able to get and see on my phone anytime of the day. I like the fact that WhatsApp connect us to our classmates and therefore discussing work that was done in class we can further discuss it in the group.

I find it effective we learn a lot in our study group chat we share information through voice recording, images and it is effective in a way that each member in the group shares what he/she learnt in that way we help each other. We learn in different ways so now each student must share.

Mellat and Khademi (2015: 23) concur that “WhatsApp provides students with the ability to exchange text messages, images, videos, and voice notes with their classmates and from lecturers to students.” Such an exchange of vital information in higher education is linked to learning as opposed to the old talk-and-chalk traditional teaching methods.

A theme that has not been emphasised, yet is important, and only mentioned by one student is that WhatsApp was used as a stress release. According to Luanan, Jain and Abd Rahman (2016: 182) “The WhatsApp group helps me to ease my burden to complete my assignment when we do jokes and it makes me laugh and release stress.” Shanmugapriya and Priya (2016:20) indicate that “using WhatsApp is helpful to manage stress level.” This finding correlates to the element of social presence described in the Col framework where students portray themselves in their online interactions.

A student stated in her interview that:

I think WhatsApp also helps in socialising. You cannot be lonely if you are using WhatsApp so you can socialise with many people you want to so that if you are stressed or you seek help with something. You can ask people for help and talk to them so that you can release that stress.

c. Developing English skills

Students do not use WhatsApp for collaborative learning only; they learn different skills such as language (English) and critical thinking skills from their classmates and lecturers. One student reported that WhatsApp helped them to improve their language skills:

I would say that it [WhatsApp] improves your language skills because mostly we chat with friends from other provinces or country like Lesotho. As a result of chats that we have on WhatsApp, we learn something about other people's language.

To extend this discussion, Alqahtani et al. (2018) report that students develop language skills through WhatsApp. Hamad (2017) states that WhatsApp helps students to develop different types of skills; students learn listening skills through videos and audios. Student reading skills are improved on WhatsApp groups when they read comments from both lecturers and classmates. WhatsApp helps students to enrich their vocabulary by reading comments, especially from other students. Riyanto (2013) claims that WhatsApp can be used to study and learn new language and not only as a communication platform.

Garrison and Arbaugh (2007) state that when students from different backgrounds use WhatsApp, it creates stronger cognitive cohesion within a group.

Another student in the same group in this specific South African project suggested that WhatsApp helps improve language skills:

WhatsApp can help to reduce spelling mistakes and it gives you more options to use when using advanced keyboard. Let us say you are communicating with other students WhatsApp reduce the spelling error as it suggests the words while typing.

Bushnell, Kemp and Martin (2011: 28) state that: "the predictive text-messaging keyboard, involves making a single key press per letter, and a dictionary-based system suggests the most likely word and several alternatives." This method limits the use of textism because its dictionary-based system makes it difficult to type words that are not on the system, which includes acronyms and abbreviations. Some of the reasons why students abbreviate when typing is because they do not know how to write the spelling of that particular word. Due to predictive keyboards, students learn vocabulary

and synonyms when using WhatsApp (Bushnell et al., 2011). This reduces the chances of students sending messages with incorrect words which helps them to learn and practice vocabulary in their phones when utilising WhatsApp.

This study found that students developed critical thinking skills as a result of discussions they had. This concurs with the findings of Kustijono and Zuhri (2018) who state that discussions which students had on WhatsApp enabled them to develop critical thinking skills.

We sometimes play mind games where somebody asks a question which requires other to think and come up with an answer. For example, Sipho's father had three sons ... In order to respond to this, one has to think.

d. Developing self-confidence from asking questions

Students developed self-confidence when using WhatsApp, by asking lecturers and fellow students questions, and this helps them in the class during their face-to-face interactions. One student narrated that:

When we use WhatsApp we are free compared to class, we are able to use voice notes to shorten or summarize the information. This boosts student's confidence as they are going to participate more and become involved in class. This makes teaching and learning easy for both students and lecturers via WhatsApp.

This supports the notion of social presence as detailed in Col concerning open communication. This student comments that the students are 'free' to express themselves. Garrison and Arbaugh (2007: 160) state that when working with online communities "... it takes time to find a level of comfort and trust, develop personal relationships, and evolve into a state of camaraderie."

The students had developed trust within the WhatsApp group and were comfortable to ask questions. A student in the focus group interviews stated that using WhatsApp as a learning tool is effective as more answers are provided: "I can post questions in a group and receive multiple responses, not feeling lost and confused; having clarity and open communication always."

Another student commented: “Yes, it is effective because students can ask questions through WhatsApp when they do not understand, unlike in a classroom because some students are shy to talk in front of other students.”

A further student supported the point that using WhatsApp offers them an opportunity to ask questions and to interact with lecturers, unlike in a classroom setting. He stated that:

When I use WhatsApp I interact with the lecturers. If I have a query concerning a certain course I will be able to contact the lecturer and ask for instance I have a question regarding my marks on an assignment or if I need explanation about a certain topic, classmates and lecturers can help to explain. The YouTube videos and notes that are sent on WhatsApp makes it easier for me to learn and familiarise myself with the course.

When connecting this sub-theme of ‘asking questions’ to aspects of Col, the researcher finds that this section correlates to cognitive presence. Akyol and Garrison (2011) state that cognitive presence: “...includes understanding an issue or problem; searching for relevant information; connecting and integrating information; and actively confirming the understanding in a collaborative and reflective learning process.” In the evidence provided, the students are asking lecturers and each other questions for clarity; they are actively searching for relevant information.

e. Facilitate distance learning

Students and lecturers in the focus group interview praised WhatsApp as an application for facilitating distance learning:

One student stated:

I do not really have to attend classes; I can just receive the notes on WhatsApp and read them on my own time, even while I am walking I can read.

Lecturer A shared:

I think that students learn better when they are relaxed, when they are less stressed about things.

Another student narrated:

WhatsApp as a learning tool on group chats we share information based on what a person has learned during classroom or self-study. At home we share voice recordings, images of slides and PDF documents.

These statements confirm the value of WhatsApp as a suitable social media for learning from a distance and they concur with the work of Arevalo (2018) who states that WhatsApp can be used as a tool for distance learning. Stepich, Lehman and Russell (2000: 210) explain distance learning as "... an organised instructional program in which teacher and learners are physically separated". This happens during the utilisation of WhatsApp: students learn in group chats while they are physically separated with their lecturers and classmates. Gon and Rawekar (2017) argue that WhatsApp enables learning to take place beyond the borders of the classroom. Availability of teachers to answer students' individual questions enhances the learning process.

The Col framework underpins this particular research study: it encourages online teaching and blended learning. Quick and efficient learning of the "hidden curriculum" takes place via WhatsApp: students and lecturers share and develop content knowledge through an online platform which increases learner satisfaction (Akyol & Garrison, 2011).

4.3.1.2. WhatsApp as a teaching tool

In this section there are three themes; each will be discussed in detail:

- a. Using WhatsApp as a teaching tool to facilitate teaching and learning;
- b. Using WhatsApp as a teaching tool to organize the lecturers' and students' academic lives during strikes;
- c. Using WhatsApp as a teaching tool to hold discussions with the lecturers.

a Using WhatsApp as a teaching tool to facilitate teaching and learning

In Figure 4.4, a student is seen to be struggling with the term "competency" and needed help. A lecturer explained the meaning of the word "competency."

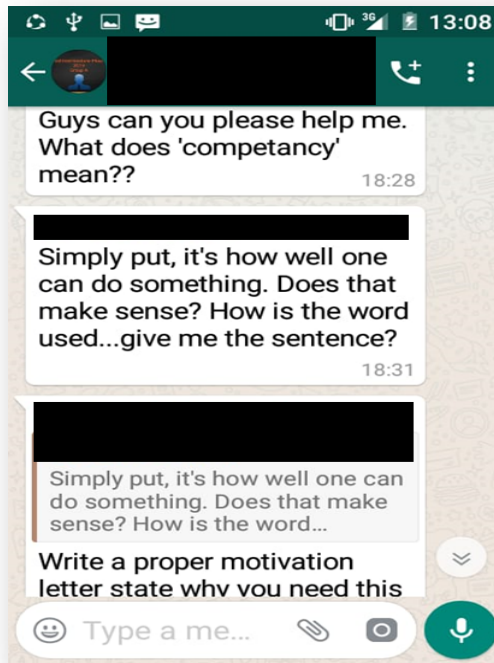


Figure 4.4 A student asking a lecturer for assistance (Source: The researchers cell phone)

Bansal and Joshi (2014) postulate that in India, students welcome WhatsApp as a learning tool that facilitates interaction with lecturers, sharing of learning material and easy access of information. Amry (2014) argues that students in universities are happy about using WhatsApp as an educational tool. They would like the platform to be used to facilitate their learning since it makes knowledge sharing and interactive learning possible. Rosenberg and Asterhan (2018) proclaim that WhatsApp allows students and lecturers to help each other; for example performing tasks, sharing answers and solutions.

This finding substantiates the element of teacher presence under 'facilitating discourse' where lecturers facilitate various learning activities on the WhatsApp group (Akyol, Ice, Garrison & Mitchell, 2010). Lecturers compile and design learning materials such as PowerPoint and videos to send to students via WhatsApp. Lecturer support on WhatsApp group associates teacher presence in terms of Col: a teacher/facilitator helps to achieve worthwhile learning outcomes (Kumar et al., 2011).

According to Garrison and Arbaugh (2007) the role of 'Teaching presence' in Col in terms of 'facilitating discourse' is associated with sharing meaning, identifying areas of agreement and disagreement, and seeking to reach a common understanding. This

is revealed in Figure 4.4 where a lecturer shared the meaning of the word “competency” with a student. This is an example of ‘Teacher presence’ and more specifically that of the ‘facilitator discourse’ as it states that “the role of facilitator is to share personal meaning” (Garrison & Arbaugh, 2007: 164).

b. Using WhatsApp as a teaching tool to organize the lecturers’ and students’ academic lives during strikes

Lecturer A concurred with the view that students were supported in organising their academic work despite strikes. The lecturers and students used WhatsApp in an attempt to progress with their educational tasks. Lecturer A commented that:

During the recent bus strikes, we were running a series of workshops for the first year students and because of the bus strikes we had to let the children stay at home. They could not get here; it became possible to give them work on a daily basis on WhatsApp and tell them what to do. I use it (WhatsApp) as a call centre. I could sit at home and they could ask questions so it was almost like a lecture in progress.

Lecturer B concurs that students were supported with their educational activities via WhatsApp saying: “They [students] can contact me to tell me if they are having a problem, or something which they do not understand and I will help them. Or they can tell me about the problem the next time I see them and I will help them.”

The use of WhatsApp during the bus strikes endorsed the aspect of ‘Teacher presence’ within the ‘Design and organisation’ category: lecturers were able to arrange and design lessons using WhatsApp, off campus, during the strike period. This particular example supports the notion of ‘Cognitive presence’ in the ‘Information exchange’ category since both learners and lecturers were able to exchange academic information during the bus strikes. This confirms the view that WhatsApp can be used as a distance learning tool (Arevalo, 2018).

c. Using WhatsApp as a teaching tool to hold discussions with lecturers

Students reported that WhatsApp enabled them to discuss ideas with their lecturers, placing them in a better position to oversee what they were discussing and to offer

corrections in case of any misinterpretations. One student in the focus group interview stated:

When sending information on a WhatsApp group, you must be specific about who you are sending the message to, because any student can reply. Even if any other student replies to the message by answering the question, it is still okay as the lecturer will be there to correct wrong answers given and he can say that what the person said was correct or incorrect or the lecturer can add to what the student has said. If the student does not understand, the lecturer will elaborate further or call you for consultation.

This finding shows that students were able to discuss ideas with lecturers. This finding substantiates the notion of 'Teacher presence' in terms of Col, specifically in the category of 'focusing discussion'.

4.4. RESEARCH QUESTION 3

Why did students use WhatsApp as a teaching and learning tool rather than Blackboard?

In spite of the fact that students were at a University of Technology (UoT) which should optimise emerging technologies and use a Learning Management System (LMS), at this university called "Blackboard", there were three negative factors (4.3.1, 4.3.2 and 4.3.3) and one positive factor (4.3.4) that influenced the students to use WhatsApp. These factors include:

- 4.4.1 Inaccessibility of learning materials: poor internet connection and shortages of computer labs;
- 4.4.2 Lack of training on how to use Blackboard;
- 4.4.3 Poor service of Information Technology (IT) department including viruses; and
- 4.4.4 Positive experiences of using WhatsApp and Blackboard.

As a result of these challenges encountered by students when using Blackboard, they preferred to rely upon WhatsApp.

4.4.1. Inaccessibility of learning materials: poor internet connection and shortages of computer labs

Although WhatsApp is criticised by many scholars as a tool which is not effective for promoting robust and meaningful teaching and learning experiences (Mwakapina et al., 2016; Simui et al., 2018; Arevalo, 2018) the students and lecturers in this research project commented on the inaccessibility of learning materials and preferred WhatsApp to Blackboard. They experienced numerous institutional challenges, including poor internet connection and a shortage of computer labs when using Blackboard. This situation led them to prefer WhatsApp as a teaching and learning tool.

One student in the focus group interview stated: “Yes! WhatsApp is much better than Blackboard.” Another student responded saying that: “*haai*, that Blackboard never works!” and another student in the same interview group said, “at least with WhatsApp we know it is going to work.”

Students claimed that Blackboard at the university hardly worked and that was why they chose to rely upon WhatsApp for educational purposes. One student claimed:

I probably check my WhatsApp more than 50 times a day. I always know when things are happening. I would never do that on Blackboard, because half the time, Blackboard is not even working. Also, the computer labs are always full, so we never get a chance for Blackboard.

Due to the poor internet connection and the shortage of computer labs, students were unable to access Blackboard. Four students commented in the focus group interview that:

I do not think Blackboard is good to use in our campus because sometimes Wi-Fi and internet are slow. Computers are not working sometimes. There is only one lab here; when you get to the lab it is full, you cannot access information. Some computers are not working. I do not think it is good to use Blackboard in our campus.

Actually I do not believe that Blackboard is a good tool for us as students because us, the underprivileged students, when we arrive at home, we do not have data to actually access Blackboard. It is better when you buy data at least it can last and it is an easy way to communicate with everyone in WhatsApp group chat. So yah, I think WhatsApp is better than Blackboard because we only have one computer lab in our campus and the internet is usually slow.

Blackboard is not very useful to me, because sometimes when you go to Blackboard to access information you find that the system is down; it is not working. And there is another thing of labs on campus becoming full. It is another challenge for us and again when you get home, you cannot use Blackboard if you do not have a computer. Even if you have a computer, for us who are underprivileged, we cannot access Blackboard if we do not have internet access at home.

The challenge is that Blackboard is very difficult because sometimes some students do not stay around campus. We do not have internet access and communication which is sent via Blackboard is not easily accessible compared to what is sent via WhatsApp.

Lecturer A corroborated these students' views, that it was better to use WhatsApp than Blackboard:

I mostly use WhatsApp. I do not use Blackboard at all because it is very problematic for the students. Many of them cannot access Blackboard because they do not have internet access. Some cannot access it because they just cannot use it properly and also Blackboard is very often down. At least with WhatsApp, I can get hold of the students instantly and we can just communicate as easy as we want to about work or about other problems that they might be having.

WhatsApp screenshots on Figures 4.5 and 4.6 show challenges reported by students about Blackboard not opening and uploading essential documents which they want to use for their studies.

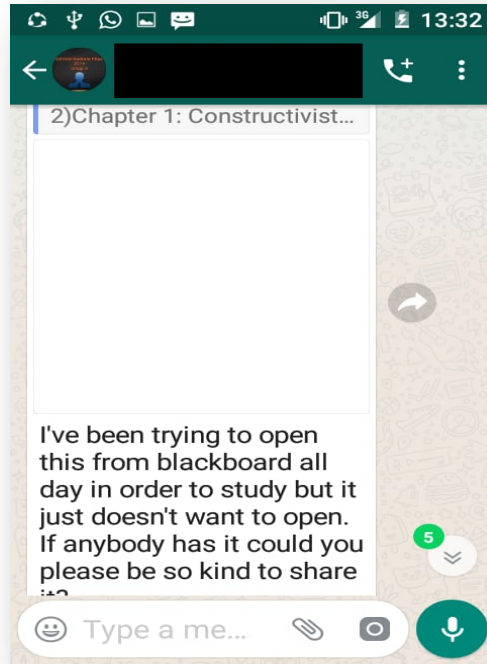


Figure 4.5 Document not opening on Blackboard (Source: The researchers cell phone)

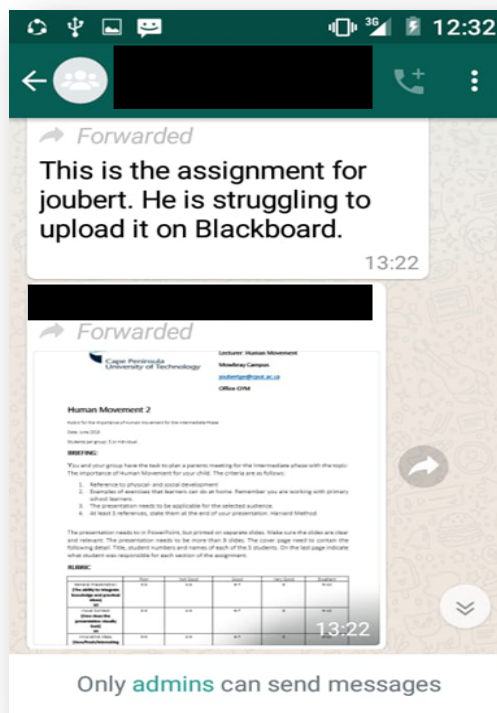


Figure 4.6 Document not uploading on Blackboard (Source: The researchers cell phone)

Figure 4.5 shows a student failing to access a learning resource on Blackboard. This is could be because of low internet connection which is often experienced on campus.

Figure 4.6 is proof that even lecturers face challenges when using Blackboard. A lecturer was unable to upload an assignment on Blackboard and asked a student to share an assignment on the WhatsApp group. Both students and lecturers were struggling with Blackboard; hence they resorted to WhatsApp as a preferred learning tool.

Moodley, Singh and Cloete (2015) explain that students complain about the low number of computers that were available at their university. This caused a serious problem for students who needed access to computers, especially when there were assessments and assignment deadlines to be met. Students complained about the poor internet service which they found to be disruptive to their studies when utilising Blackboard (Moodley et al., 2015). In Kenya, Makokha and Mutisya (2016) concur that students faced poor internet connections off the university premises and the high expenses involved in Wi-Fi connectivity. Alturki and Aldraiweesh (2016) agree with their study, stating that due to slow internet, lack of guidance on how to use Blackboard, students are unable to utilise Blackboard at the university.

Meda (2017) concurs that lecturers instruct students to check and download material on Blackboard. Students do not access those learning materials as promised by lecturers. Meda (2017) reveals that students feel that it is difficult to do group work on Blackboard because of the issues that are experienced by students such as internet access and inability to use it properly. Because of the challenges that students are facing on Blackboard they prefer to participate more on WhatsApp. Boshielo (2014: 53) supports the view that Blackboard is not a suitable tool to utilise at university. One student who participated in the focus group interview in this project at a university of technology in Cape Town stated: "Blackboard learn is not simple for me because I have never use it, it is not at all the times that the system is available due to university's network problems."

Students indicated that accessibility was a problem, especially when they were asked to access the links and videos on Blackboard. Three students commented:

Sometimes you can even try to access those videos they send on Blackboard and then you find that the video is corrupt it cannot even open on the computer and on WhatsApp it is easy because if the lecturer has the video she/he can just forward that video to the group chat and all of us

can access that video even if a lecturer wants to communicate with us can just send a voice record so that we can understand what he/she is talking about.

We are struggling with the links that are sent by lecturers because they lead us to the wrong information and some links cannot open. But WhatsApp is much easy because when the video is forwarded we can all see it.

I find learning using WhatsApp effective compared to Blackboard. I was not able to retrieve some work from Blackboard during the first semester. My classmates added me on WhatsApp group so I get all notes and information.

It was important to note one student's solution to the accessibility issue:

Let us say someone is conducting a research and ask me what I would like to be improved on WhatsApp. I would say Blackboard should be plugged into WhatsApp. That way, we will be able to use our WhatsApp data to access our results for tests. It would be nice to have Blackboard linked to WhatsApp so that we can login without student numbers and use it.

The issue of inaccessibility of learning materials, including poor internet connection and the shortage of computer labs at the university of technology resorts under "Teaching presence: Instructional design and organization" in terms of Col (Garrison & Arbaugh, 2007: 164). Lecturers wanted to organize their lecturing by posting their lecture notes and Power Point presentations on Blackboard. But this prevented many students from accessing the notes. Many universities are moving towards providing "design and organizational support to instructors through the use of common instructional design formats"(Garrison & Arbaugh, 2007: 164), however, students in this research project have commented that the university organisations and designs (Blackboard) have not assisted them.

Another reason why this research aligns with aspects of Teaching presence in terms of Col is that students like the accessibility of teaching and learning that takes place on WhatsApp, compared to teaching and learning on Blackboard. Easy access of learning resources shared via WhatsApp is supported by Rosenberg and Asterhan (2018) who proclaim that WhatsApp allows students to help each other; for example, uploading homework, task, share answers and solutions.

Under the category of 'Teaching presence', the results from this research project aligned with the "facilitating discourse" (Garrison & Arbaugh, 2007: 164). Despite the lack of accessibility to the university's Blackboard system, "Facilitating discourse is critical to maintaining students' interest, motivation, and engagement" (Akyol, Garrison & Ozden, 2009: 68). When lecturers facilitate teaching on WhatsApp, student interest and engagement are promoted: they are able to access information more easily than on Blackboard. Ujakpa, Heukelman, Lazarus, Neiss and Rukanda (2018) agree that WhatsApp helps students to access learning materials that are sent by lecturers, activities and to schedule group discussions. WhatsApp provides real-time texting or communication including easy access of information shared such as audio, video files and images (Shariffuddin, Hashim & Shaaidi, 2016). Bansal and Joshi (2014) postulate that in India, students welcome WhatsApp as a learning tool that has the potential to facilitate interaction with lecturers, sharing of learning material and easy access of information. Accessibility of WhatsApp influenced students' decisions to prefer social media to Blackboard.

4.4.2. Lack of training on how to use Blackboard

Although the UoT referred to in this project encourages the utilisation of Blackboard, students and lecturers did not feel supported with the necessary training and skills in order to be able to use the LMS. Three students who participated in the focus group interview explained:

When I first arrived here at the university I did not even know there was something called Blackboard. So we did not actually have a training that teaches us how to access Blackboard. We had to find out ourselves how to use it and it was challenging because we were new we did not know how to use it. There were some assignments which we did not do because we could not access Blackboard.

There are some Information Communication Technology (ICT) classes for the Intermediate Phase students. I am not sure about other phases but in Intermediate Phase there is that class where they teach us how to use computer but they do not dwell much on Blackboard.

I did not get any training on how to use Blackboard I also learnt myself and many students are still struggling even if they are second or third years but they are still struggling about using Blackboard. It is not like WhatsApp which is easy to use.

Students were asked if they had raised issues of a lack of Blackboard training with their lecturers and one student commented:

We have not informed lecturers because we are afraid of changing the way of doing things at the university because when we arrived here they were using the same thing we are just not ready to change things.

According to Riley (2013) the Blackboard system is an issue for both students and lecturers because it requires users to have extensive technological knowledge in order to use this Blackboard system competently. Lecturers observed that students were not conversant with Blackboard; many of them had never used it before (Cilliers & Niekerk, 2017). Similarly, in Europe and England, Heinze and Procter (2004) state that students feel that the level of support and guidance from lecturers on how to use Blackboard is not satisfactory. That is why they do not optimise the LMS in some institutions.

In Botswana, lecturers complain about a lack of training and feel helpless about how to use Blackboard, especially when uploading the learning materials (Uziak et al., 2018). According to Ismail and Sahil (2018) in the context of Bahrein, the Arabian Gulf University staff members needed to be trained on how to develop online courses and administer their students learning via Blackboard. Fernandez-Robin, Yanez and McCoy (2019) concur that WhatsApp is an application that offers messaging and is easy to use. No training and guidance is required on how to use WhatsApp, however, many users are unfamiliar with the application such as Blackboard where students need guidance and training in order to be able to use it. As a result, students prefer learning via WhatsApp to Blackboard. This lack of training on how to use Blackboard, in this study, meant that lecturers needed to take time out of their curriculum delivery, because Blackboard was not part of their curriculum content.

The issue of lack of training preventing both students and lecturers from using Blackboard supports the notion of 'Cognitive presence' in terms of Col and the category of 'triggering event'. According to Park (2009: 143) a triggering event "is an issue, dilemma or problem is identified or recognized that emerges from experience. Expectations or tasks provided by the teacher often become triggering events". In this research project, the students' lack of access and familiarity with techniques of

Blackboard became a triggering event for both the students and the lecturers. Both parties preferred to use WhatsApp as a teaching and learning tool.

4.4.3. Poor service from the Information Communication Technology (ICT) Department

Students were asked how they logged in on Blackboard. One student in the focus group interview responded that: “The only thing given to you is student number, when you login on Blackboard you must have student number and password. If you forget password, you can go to ICT people to reset your password.” However, another student in the focus group interview criticised the ICT Department at the UoT for failing to help them [students] when they were experiencing problems with technology such as resetting login details. The student stated that:

The issue about ICT people, they can just tell you that you must not come to him personally you should call or send an email while they even take too long to respond on those emails. When you try to call that landline it can ring and ring and ring and no answer and nobody has airtime to contact landline because landline uses so much airtime. So if you are busy calling a landline and you have been kept on hold you end up not wanting to use that thing.

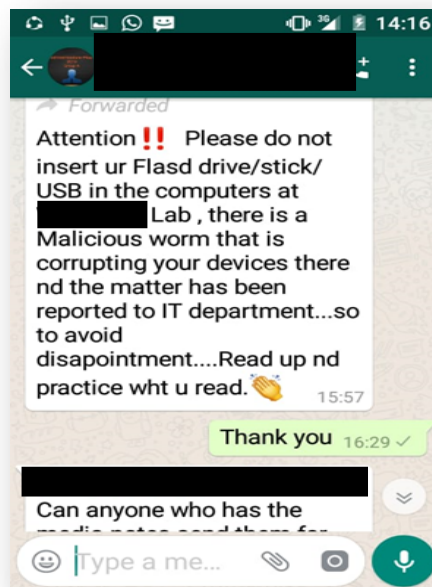


Figure 4.7 Computers infested with viruses (Source: The researchers cell phone)

Figure 4.7 shows that computers at this UoT were not suitable to be used by students. Another student commented:

We once informed our lecturers about this thing of Blackboard and they always tell us that they are going to alert those people who are dealing with maintenance of computers at the university. They never do anything about that. They always tell us that they are going to contact ICT department and then when you go to the computers you find that the same problem has not been fixed yet.

According to Ince and Irwin (2015) “Blackboard is password protected with the students' campus-wide username and password, and courses are only accessible to students enrolled in the class”. El-Sofany, El-Seoud, and Farouk (2018) state that “Students are used to username and password authorisation to access the Blackboard system.” The poor service of ICT aligns within the CoI ‘Social Presence’ and the category of ‘Communication’ which states the ‘Opportunity to express view’ (Garrison, Anderson & Archer, 2000). Many students in this study had attempted to communicate and express their views to the ICT Department without receiving much support.

4.4.4. Positive experiences of using WhatsApp and Blackboard

Students were asked if they preferred using WhatsApp or Blackboard in their education. The majority of students reported that they preferred using WhatsApp as a suitable learning and information sharing tool compared to Blackboard. The following quotations from students support this view:

*I will go with WhatsApp;
I also think WhatsApp is suitable to use in our campus;
I will also go with WhatsApp;
WhatsApp is the best in education; and
I would recommend that they stop giving us work on Blackboard.*

One student elaborated further:

WhatsApp is better than Blackboard because at least on WhatsApp you can have group chat with students and lecturers. You can even ask someone to convert the document to Portable Document Format (PDF) so that you can open the notes or you can even ask them to make screenshots and do your work at home.

Moodley et al., (2015) support the fact that students prefer learning via social media as they had easy access to their phones. Ramabu (2019) concurs with this point by stating that students participate more on social media learning platforms than Blackboard. This view is in agreement with the findings of this current study, where

students preferred using social media (WhatsApp) to Blackboard due to the many challenges Blackboard constantly presented.

Bouhnik and Deshen (2014) explain that sending learning materials such as a video, or a copy of possible solutions for an exercise via WhatsApp group, helps to ensure that all students receive it even if it is sent after school hours. This causes students to prefer WhatsApp to Blackboard since they are able to access the learning resources when they are outside the campus. Bouhnik and Deshen (2014: 227) support the fact that students can utilise WhatsApp everywhere by stating: “WhatsApp enables easy and quick transference of links to study materials, unlike any other technologies which often do not work, or other forms of communication that students just do not use after school hours.” These findings resort under ‘Teacher presence’ where lecturers facilitate various learning activities on WhatsApp group (Akyol, Ice, Garrison & Mitchell, 2010).

In spite of the fact that there was a number of students who strongly supported the positive experiences of utilising WhatsApp in their teaching and learning compared to Blackboard, there were some who disagreed. Some claimed that Blackboard was better than WhatsApp. Two students offered the following comments:

I stay at the university’s residence and I use the university Wi-Fi to access Blackboard. I can also get information from Blackboard, downloading notes, assignment and videos.

I see Blackboard as a good tool to use because I always get learning resources and I use the campus Wi-Fi.

Lecturer B who preferred using Blackboard than WhatsApp commented:

When it comes to sharing a large amount of data I still use Blackboard but as a backup I use WhatsApp and inform them [students] on WhatsApp group to check Blackboard.

In Africa, students and lecturers at higher institutions of learning have different views about the use of Blackboard. In Lesotho, students view Blackboard as a tool that makes them actively participate in their learning and they can access Wi-Fi at anytime and anywhere (Nyabawa, 2016). Boshielo (2014: 63), from South Africa postulates that: “I find the Blackboard-learn easier and available when I am inside the campus,

but I struggle when I am outside.” Boshielo (2014) concurs that students support the use of Blackboard as it offers them an opportunity to access learning resources, announcement about assessment, to develop communication, and collaborate with each other. He continues by stating that with Blackboard, students may access the learning system at any time that is convenient as long as they are connected to internet. Students who praised Blackboard above WhatsApp are supported by Uziak, Oladiran, Lorencowicz and Becker (2018) who argue that Blackboard is a class management tool; especially when it comes to sharing information such as timetable, learning resources. Cilliers and Niekerk (2017) mention that during the #FeesMusFall strike in South Africa, Blackboard played an essential role as some students were able to access learning materials on Blackboard.

These results that describe the positive experiences of using WhatsApp and Blackboard by both students and lecturers support the aspect of ‘Teacher presence’ cited in Col, particularly ‘facilitating discourse’. In this category, lecturers facilitated various learning activities and preferred to use WhatsApp (Akyol, Ice, Garrison & Mitchell, 2010).

Both WhatsApp and Blackboard were welcomed by lecturers and students with mixed emotions however it is undoubtedly true that the majority of students and lecturers preferred WhatsApp to be used as a teaching and learning tool as revealed by the findings of this study and scholars who fully support the utilisation of WhatsApp as a teaching and learning tool at university (Akintola, 2017; Gon & Rawekar, 2017; Rosenberg & Asterhan, 2018).

4.5. RESEARCH QUESTION 4

What are the challenges and possible management strategies of using WhatsApp in an initial teacher preparation programme at a University of Technology in South Africa?

Although students reported issues they were experiencing when using WhatsApp as a learning tool, some students offered management strategies to manage their distractions and other issues that they were experiencing on WhatsApp. These

management strategies are presented within each challenge and are described in Table 4.1.

Table 4.1 Student challenges and what strategies they used to managed them

	Challenges	Management strategies
4.5.3.1	WhatsApp experiences that distract academic learning	Helpful behaviours
4.5.3.2	Receiving several messages	Switch off data bundles
4.5.3.3	Data bundles	University should provide data
4.5.3.4	Cultural differences	Setting rules on WhatsApp group
4.5.3.5	Cyberbullying	Multiple group administrators
4.5.3.6	Other issues	

4.5.1.1. WhatsApp experiences that distract academic learning

Although some students felt that WhatsApp helped them to share important information, some stated that a few group members did not exploit the platform not for academic purposes, which it was intended for, but for making jokes and having arguments. These distractions upset many students who wanted to use WhatsApp for academic purposes. Four students in the focus group discussions narrated their experiences of these distractions:

The bad side of WhatsApp is that you get distractions. You find that in groups when we share important information, someone could be making jokes and people will start following that and then there will be arguments among students and then people will be wanting to remove some people from the groups. So, WhatsApp is very helpful and at the same time distractive.

When you are doing an assignment, sometimes you find that you have those arguments and then someone is bringing this idea up and another is throwing a different idea. It is much better when you communicate rules upfront. Some people when they start using voice notes they will send about four consecutively. Somebody else will then send theirs and it will be a long list of voice notes to be listened to. So, it is really not effective but when you are sitting together face-to-face, you get to communicate properly and give each other chance to express their views.

Trying to study while someone else is busy texting you is not easy. You know how people are, they see you online, they want to chat about non-educational stuff. If you are a person who can switch off data and have self-control and tell yourself that you are just going to study. For me, WhatsApp is not effective.

WhatsApp is a problem even if you want to focus on school work you will be curious you will want to see what is going on you will want to see what are your friends saying. Even if you switch off the data is not always the matter because you will want to check WhatsApp.

Management strategy: Helpful behaviours

In this section three students offered helpful behaviours to manage the distraction on WhatsApp and these include: multi-tasking, ignoring the behaviour and lecturers writing messages alerting the students to their unavailability.

One student in the focus group interview reported that WhatsApp had distractions, but he managed them by multi-tasking. This student stated that:

I do not want to lie and say I mute some friends or groups, I can do both because WhatsApp is the fastest way to communicate with people so I can answer someone giving me advice about learning or something like that and answer someone who is making jokes at the same time. I can multi-task.

Another student from the focus group interview suggested ignoring was a strategy to manage distractions from those who abused the application [WhatsApp] by sending unnecessary questions on the group and individually:

Ignore the person then they will get the message very clear that you are not interested. Even when a person asks questions that are not relevant to school work we ignore that person. If you persist we address you and tell you that this is not relevant to our group.

Lecturer A explained how she managed this disruption on WhatsApp saying that:

I will put a note in the group that says - listen guys I am having supper contact me in an hours' time and they respect that and they do it so I do not have a problem with it.

Mwakapina et al. (2011) concur that WhatsApp is a social media which students predominantly use to chat with their friends and relatives and it becomes difficult to do serious academic work without distractions from other people. Mwakapina et al. (2016) who, in a more recent study, state that the usage of WhatsApp is welcomed with mixed feelings as some people think that it is ideal to use for educational purposes while others say it is not.

The issue of distraction fits within the 'Cognitive presence'. According to Liam and Kanuka (2009: 39) the "cognitive presence is a four-stage process that begins with a triggering event - a dilemma that emerges from the students' experience or, in a formal educational setting, from instructional materials." In this current study, these students found that triggering events led to distractions, which impacted on cognition.

4.5.3.2 Receiving several messages

Students freely expressed their feelings about receiving several messages from the WhatsApp group, especially irrelevant messages. One student from the focus group interview stated: "Sometimes there are so many messages in the group that we miss important stuff." Another student commented: "To try to sort out what is important stuff, and what is nonsense is a big challenge." These two students' comments are supported by Arevalo (2018) who reported that WhatsApp can be frustrating sometimes due to numerous messages and the repetitive nature of information on group chats. Carrera (2018) reiterates that students often feel overwhelmed because of numerous messages they received on WhatsApp.

Management strategy: Switch off data bundles

Two students in a focus group interview revealed that they switched off their data bundles in order to avoid receiving several messages on the WhatsApp group.

I switch off my data so that I do not receive messages on my phone. If I want information from the campus, I switch on the data after an hour or 30 minutes so that I can check if I have no urgent messages from lecturers.

If you want to study you can switch off your data while you are studying and then when you are done, you can switch on the data and then continue using WhatsApp.

This dilemma of receiving several messages on the WhatsApp group, fits with the 'Social presence' under the 'Open communication element' (Garrison & Arbaugh, 2007). Since students feel free to communicate all the time, other students feel the need for peace and quiet and they suggest that turning off the data bundle would assist them.

4.5.1.2. Data bundles

Data bundles were used by students to access internet which was needed for students to use WhatsApp. Information overload from students on WhatsApp group was noted as a concern as the regular use of WhatsApp finished the students data bundles (Bouhnik & Deshden, 2014).

In this research study, three students in the focus group interviews commented:

WhatsApp is not ideal because they run out of data bundles on their phones and when the phone gets stolen, they will be left behind.

When there are big things to download, we run out of data.

... data to connect to internet is the greatest challenge that we face as students.

Management strategy: University should provide data

A student in a focus group interview recommended that the institution should provide data bundles in order for them to be able to utilise WhatsApp without worrying about buying data bundles. This student asserted that:

Maybe they [the UoT] should give us money for data, because they use our WhatsApp for their messages.

The issue of data bundles that were depleted due to downloading learning resources on the WhatsApp group, fits with the 'Cognitive presence', particularly 'Information exchange' (Garrison & Arbaugh, 2007). Students' data bundles ran out because of 'Information exchange' amongst the students.

4.5.1.3. Cultural differences

This UoT welcomes diverse students who come from different places and practice different cultures and religions. One student noted that these differences cause conflict among students on the WhatsApp group. This student noted: "We do not understand one another's cultural background and others do not understand jokes. It goes with religion also." Two students recounted that:

I would notice that we are dealing with hundred students where they will be fights because of different languages, some will be writing in English or Afrikaans. I have learnt that common things would cause fights towards

different racial maybe we need to understand each other which is not easy to do on WhatsApp.

People are using their home language which we sometimes do not understand. Some are so bossy they want us to feel inferior when chatting with them.

Figure 4.8 shows a screenshot of a student using a local language which was not understood by some group members.



Figure 4.8 Different languages used on the WhatsApp group (Source: The researchers cell phone)

Management strategy: Setting rules on WhatsApp group

Two students from the focus group interview pointed out that setting ground rules is an effective management strategy to maintain discipline:

It is essential to set up ground rules so that if anyone says A, B, C or D she/he will be blocked or removed from the group.

There must be rules and regulations for those who are rude and misbehaving. Lecturers must be involved in our group to command attention when students are misbehaving.

Madge, Breines, Dalu, Gunter, Mittelmeier, Prinsloo and Raghuram (2019) contend that students should set ground rules for how to run a WhatsApp group. Earlier, Manan (2017) states that students abuse the platform due to lack of rules.

The cultural differences amongst students aligns with 'Social presence' in an 'Open communication' where some students openly express themselves in their own local languages such as isiXhosa and Afrikaans (Garrison & Arbaugh, 2007).

4.5.1.4. Cyberbullying

Students were harassed and bullied on the WhatsApp group which made them feel intimidated. Students commented:

In our group chats learners can become disrespectful which lead to verbal conflict. Other students take advantage because of the absence of lecturers.

Sometimes the messages sent can be interpreted in the wrong way. This has happened to me before when I thought someone was attacking me and I was defenceless.

Aizenkot and Rosenbaum (2018: 4711) state that "University students are experiencing different types of cyberbullying such as insults, curses, forced removal from WhatsApp groups and offensive photos."

Management strategy: Multiple group administrators

One student in the focus group interview noted that it was not easy to remove misbehaving group members when the group had only one group administrator. This student pointed out the advantages of having multiple administrators on the WhatsApp group:

The suitable strategy to manage distractions on WhatsApp group is to remove those misbehaving students. When the group chat is managed by one administrator it is not easy to immediately remove misbehaving students. Having multiple group administrators makes it easy to remove misbehaving students.



Figure 4.9 Removal of group member (Source: The researchers cell phone)

Figure 4.9 is proof that misbehaving students were being removed from the WhatsApp group. According to this screenshot 'only admin can send messages'. This is one of the management strategies to ensure that students are disciplined members of the group, although it may deprive other students the opportunity to freely express themselves and to share information.

Ujakpaet al., (2018) recommends that WhatsApp needs to be developed in such a way that all messages that are sent on WhatsApp group must first be viewed by the group administrator or a lecturer so that she/he can delete if the message is unnecessary and not related to the teaching and learning. Aizenkot and Rosenbaum (2018) confirm this by arguing that some students were removed from a WhatsApp group because of their behaviour.

Cyberbullying fits within the 'Social presence' in an 'Open communication' as students do not differentiate between doing wrong and right on the WhatsApp group as they just communicate openly without thinking about how the receiver will feel about the message (Garrison & Arbaugh, 2007).

4.5.1.5. Other challenges

Beside distractions, receiving several messages, data bundles, cultural differences and cyberbullying some students revealed other challenges they encountered when using WhatsApp in education. These challenges include: unavailability of lecturers, when a phone is stolen, and inaccessibility of other applications such as excel and PowerPoint on their phones. The following comments were made during the focus group interviews regarding these three points:

The lecturer would take the whole week to answer the questions and they send information in a short period of time. The lectures are not always there to answer all the questions.

My phone was stolen, and for two weeks, I did not know anything that was going on. People say they will tell you, but they forget.

... let us say there is Microsoft word or excel to download on WhatsApp it takes you into another application because if you do not have those applications you will not be able to open the document.

Management strategy: other challenges

A student came up with a strategy to help those who do not own smartphones that have Microsoft office. The student said: “I remember when I was doing an assignment and I did not have Microsoft excel on my phone. I asked my classmates to screenshot the notes for me. It comes as a picture on your WhatsApp. Even if you do not have a PowerPoint Microsoft in your phone screenshotting is a solution.”

The management strategies that are being used by both lecturers and students to manage distractions falls under ‘Cognitive presence’ as the management involves the extent to which students are able to use their critical thinking skills (Garrison et al., 2010). This is related to this study where students used their cognitive skills to manage distractions on the WhatsApp group. Although students encountered several challenges when using WhatsApp, they still preferred the application to be used as a learning tool.

4.6. CHAPTER SUMMARY

The chapter presents the results of this investigation to answer the research questions. The first research question about “How is WhatsApp used as a communication tool in an initial teacher preparation programme at a University of Technology (UoT) in South

Africa? All research participants indicated that the WhatsApp is utilised as a communication tool because it is accessible, affordable; they used it as an information sharing and reminding tool which makes communication easy. Utilising WhatsApp for communication purposes ideally aligns with social presence where students portrayed themselves in their online interactions with both classmates and lecturers. The second question about how is WhatsApp used as an educational tool? several themes came such as, it is used as a teaching and learning tool, it is used as tool to develop English skills, it created collaborative learning, and lecturers used it to facilitate distance learning and it also develop students confidence. The use of WhatsApp as a teaching and learning tool concur with teacher presence as lecturers provided guidance, instructions and support to students on the WhatsApp group to achieve positive educational outcomes. Student's and lecture's collaboration on the WhatsApp platform is compatible with the cognitive presence as students use their critical thinking skills to perform learning activities. The strategies and skills that were used by both students and lecturers to manage the issues they encountered when utilising WhatsApp as a teaching and learning tool aligns with cognitive presence.

Based on the findings of this study students chose WhatsApp over Blackboard because of poor internet connections, shortage of computers, lack of training on how to use blackboard and poor service of ICT which makes them prefer WhatsApp than Blackboard. Although students praised the application for its suitability in education, they noted some limitations such as distractions, receiving several messages, data bundles, cultural differences which leads to cyberbullying. Both students and lecturers recommended some useful strategies to manage these challenges which includes assistance off data bundles as the university could provide data, setting rules on WhatsApp group and having multiple group administers.

CHAPTER 5

DISCUSSION, RECOMMENDATIONS AND CONCLUSION

5.1. INTRODUCTION

This study explored the ways in which lecturers and students utilised WhatsApp for teaching and learning at an initial teacher preparation programme at a UoT in South Africa. This chapter begins by presenting a summary of key findings that were guided by five critical questions: comprising one main research question and four sub-research questions:

Main Question:

How do lecturers and students utilize WhatsApp for teaching and learning in an initial teacher preparation programme at a UoT in South Africa?

Sub-questions:

1. *How is WhatsApp used as a communication tool in an initial teacher preparation programme at a UoT in South Africa?*
2. *How is WhatsApp used as an educational tool in an initial teacher preparation programme at a UoT in South Africa?*
3. *What are students' preferences of WhatsApp to using Blackboard?*
4. *What are the challenges of using WhatsApp in an initial teacher preparation programme at a UoT in South Africa?*

The findings that emerged from these research questions were discussed in detail in Chapter 4, linking the literature review and theoretical framework. This chapter discusses findings emanating from this study. There are four main points that emerged as foci for investigating the utilization of WhatsApp for teaching and learning at an initial teacher preparation programme at a UoT, and they are:

- (i) WhatsApp as an instant messaging application,
- (ii) different learning styles and pace,
- (iii) body language during the use of WhatsApp,
- (iv) and student satisfaction.

The recommendations for teaching practice, policy and further research are provided. This chapter ends with a concluding paragraph.

5.1.1. WhatsApp as an instant messaging application

The findings of this study showed the effectiveness of utilizing WhatsApp as an Instant Messaging (IM) service for teaching and learning at the UoT. This is revealed by a quotation from a lecturer who participated in the focus group interview and stated that:

At least with WhatsApp, I can get hold of the students instantly and we can just communicate as easy as we want to about work or about other problems that they might be having.

Two students in the focus group interviews supported the fact that WhatsApp is an IM.

It is easy to communicate, and the response is fast as most of the people are always on WhatsApp for their personal issues. Things which are posted on WhatsApp for learning are understandable and short, lecturers can also maintain communication with students, and we can also use Wi-Fi instead of using data.

WhatsApp is useful because you get information fast and then you communicate with students and lecturers fast.

WhatsApp IM applications permits users to exchange messages quickly, send links, videos, written messages, photos, voice messages and voice calls via cell phones and computers (Abraham & Fanny, 2019). They state that information and knowledge are speedily and easily constructed and shared via the WhatsApp IM. WhatsApp is reachable from “anywhere, anytime” to “everywhere, every time” inspiring collaborative learning study habits (Kopung & Naidoo, 2016:271). WhatsApp as an IM has the potential to increase learning (Smit, 2012), and information can be retrieved in real time. Sharing that information through technology is both instantaneous and convenient on WhatsApp (Gon & Raweka, 2017). Students were able to think creatively and construct knowledge because of their instant utilization of WhatsApp. The ability to work as a group is another crucial benefit of using WhatsApp amongst students as they reported that WhatsApp allowed them to work instantly, collaboratively and share information.

These findings are consistent with Col; specifically, with the element of cognitive presence as it is characterized by information exchange (Garrison, 2011).

5.1.2. Different learning styles and pace

Arbuthnott and Kratzig (2015:2) state that students' learning styles and pace are strengthened by utilising WhatsApp as a teaching and learning tool. They claim that: "learning style's theory is that we differ from each other in learning abilities and preferences, and that matching these preferences with instructional methods and learning environments greatly improves student learning." Learning styles are explained as "characteristic cognitive, affective, and psychosocial behaviours that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Stander, Grimmer & Brink, 2019).

Although the majority of students praised the ability of the application to accommodate their different learning styles and pace, not all students reported that they learnt better on their phones. One student recommended that Higher Education Institutions should consider utilization of blended learning in order to accommodate all students: "WhatsApp it is really not effective: but when you are sitting together face-to-face, you get to communicate properly and give each other chance to express their views." The ability of lecturers to facilitate teaching online (WhatsApp) and accommodate differences among students in terms of learning styles and pace, gave rise to 'teaching presence'. Lecturers played a crucial role in ensuring that successful facilitation of teaching and learning took place on WhatsApp (Akyol et al., 2010).

Beside WhatsApp appealing to different students' learning styles, WhatsApp has been found to accommodate the different learning paces of individual students. This is evidenced in this study since the application allowed students to study on their phones at any time, as stated earlier. Korikana (2020: 29) states that "there are different types of learners such as fast learners, average learners, and slow learners." Slow students are not always able to keep pace with the current learning and they do not learn as fast as the rest of the class; however, the issue is not that they cannot learn but that they do so at a different pace (Korikana, 2020). Utilization of WhatsApp offers an advantage to those students who work at a slower pace in class: they are granted an opportunity to interact more with their lecturers and classmates for clarification. This

corresponds with Col particularly the social presence which seeks to ensure that learners are receiving meaningful and educationally worthwhile learning outcomes. Rogers and Lea (2005) mentioned that when utilizing online communication tool, lacking in nonverbal communication cues for example body language, physical presence and voice projection, these do not prevent the 'social presence' to take place. Similarly, student's different learning styles and pace did not prevented meaningful learning to take place on WhatsApp.

5.1.3. Body language during the use of WhatsApp

Rogers and Lea (2015) state that students can learn anywhere on WhatsApp. Nonverbal communication cues such as body language, physical presence and voice projection do not prevent them from socializing and collaborating with other students and lecturers. This makes it easy for both students and lecturers to learn and teach on WhatsApp without concerning themselves about body language, eye contact and physical appearance. As a counter argument, Yuanyuan (2014) states that body language does play an important role in the interaction between students and lecturers. It revives and stimulates student interest and enhances teaching effectiveness. Body language helps to improve the listening, speaking and reading skills of students. According to Sutiyatno (2018: 142) "communication is more than words, it is important for teachers to understand the nonverbal messages they are sending and receiving in classroom."

Body language is not only critical in the education field; it is important in many careers. According to Diogo, Rodrigues, Caeiro and Sousa (2016) professional nurses should show body language that is congruent with their verbal communication as they are conveying a professional message which impacts the emotions faced by student nurses. A study conducted by Bimray, Jooste and Julie (2019) reveals that student nurses pay close attention to the body language of their professional mentors: they can sense true caring by their body language. This awareness is of considerable value to nurses and emphasizes the importance of lecturer's role-modelling their facial and body language to their students.

Two quotations from students who participated in the focus group interview showed that students prefer learning which takes place on WhatsApp to classroom tuition.

WhatsApp is effective because I learn better when I am on my phone and I can see it anytime, especially receiving notes and documents from peers on work done in class unlike in the classroom.

Yes, it is effective because students can ask questions through WhatsApp when they do not understand, unlike in a classroom because some students are shy to talk in front of other students.

As lecturers are unable to use nonverbal communication to their students when teaching using WhatsApp, this constrained students' opportunity to learn and observe body language of their lecturers. This reduces the chances of students learning these important expressive skills which may curtail their ability to make a presentation in their own classrooms and communicate in the working environment.

This UoT should be training and preparing students to become effective and professional educators. Students should be able to role-model appropriate verbal and non-verbal behaviours. Poor communication skills may cause students to be shy and reticent about expressing themselves in the learning environment as revealed by students. However, WhatsApp offers shy students an opportunity to learn and express themselves without showing these nonverbal skills which are key in personal communication. Students need to learn public speaking skills and develop their confidence if they want to become excellent educators and excel in the academic field.

As stipulated in the Curriculum and Assessment Policy Statement (CAPS) (2011:18) Further Education and Training Document, the following skills from Grades 10 - 12 learners are clearly set out: "Learners must be able to practice and demonstrate oral presentation skills by using verbal and non-verbal techniques (e.g. tone, voice projection, modulation, volume, pace/tempo, phrasing, eye contact, facial expressions, gestures and body language) for presentations." Shinge and Kotabagi (2020) states that eye contact, hand movement, posture, body movement, facial expressions are vital presentation skills for students to develop when they teach.

Teachers must be competent in these skills as they are required to role-model to their learners these nonverbal skills and effective use of facial and body language. The most suitable time for students to learn these skills is during their undergraduate training. It is important for students to be physically present in classroom and learn from their lecturers.

The need for students to be physically present at educational settings adds value to the Col's social presence, in an open communication environment. Social presence is the capability of participants to identify with the community. The inability of students to attend classes because of utilizing WhatsApp precludes social presence. This situation, unintentionally hinders students from acquiring role-model professional body language skills.

5.1.4. Student satisfaction

Appleton-Knapp and Krentler (2006) state that there are two factors that influence student satisfaction in higher education: personal and institutional factors. Personal factors include preferred learning styles, employment, gender and age. Institutional factors consist of teaching style, lecturer feedback, and quality of instruction. Personal factors are in agreement with Col social presence specifically 'group cohesion' which stated that social presence, in a community of inquiry, must create personal but purposeful relationships which includes addressing participants by their names, using the inclusive first-person plural and salutations (Dixon et al., 2006; Kreijns et al., 2014). Kreijns et al., (2014) states that getting feedback and expressing agreement are indicators of 'open communication', this link to institutional factors.

Four students revealed how WhatsApp satisfied their learning.

I like the fact that most of my notes I am able to get and see on my phone anytime of the day.

I like the fact that WhatsApp connects us to our classmates and therefore discussing work that was done in class we can further discuss it in the group.

When I use WhatsApp, I interact with the lecturers. If I have a query concerning a certain course I will be able to contact the lecturer and ask, for instance, I have a question regarding my marks on an assignment or if I need an explanation about a certain topic, classmates and lecturers can help to explain.

WhatsApp as a learning tool on group chats, we share information based on what a person has learned during the classroom or self-study. At home we share voice recordings, images of slides and PDF documents.

These four students praised the personal and institutional factors of WhatsApp application's ability to communicate with their classmates and lecturers, where they reminded each other about submissions deadlines. They could work collaboratively and discuss their learning. They could read the notes, and it was a simple to use social media and cost effective. The quality of online learning had an impact on learners' satisfaction, especially those features that have an impact on how learners use the system (Cheng, 2012; Mtebe & Raphael, 2018). WhatsApp has features such as voice recording, images, PDF and video call as stated by the student. All these features helped the students to feel satisfied.

In this research, not all students were satisfied when using WhatsApp as a learning tool. Three students were not happy and revealed their dissatisfaction:

The bad side of WhatsApp is that you get distractions. You find that in groups when we share important information, someone could be making jokes and people will start following that and then there will be arguments among students and then people will be wanting to remove some people from the groups. So, WhatsApp is very helpful and at the same time distractive.

WhatsApp is not ideal because they run out of data bundles on their phones.

When there are big things to download, we run out of data.

Ali, Sameemkardar and Zia (2020) state that some challenges faced by students, while using WhatsApp include: they are a distraction, expensive data package and network availability. Agarwal and Alrowaili (2020: 820) state that "Few students living in joint families preferred the traditional classroom learning more as they found teaching via WhatsApp disturbing to them due to space constraints and distraction by other family members around them."

The fact that some students were not in favour of using WhatsApp in a risk-free environment, due to these challenges they experienced, gave rise to problems in terms of social presence. They were able to communicate openly and yet they found it distracting.

5.2. RECOMMENDATIONS

Based on the results of this study, the researcher now provides recommendations for teaching at HEIs, policy and for further study.

5.2.1. Recommendations for **teaching** at HEI's

- It is recommended that lecturers equip themselves with skills and knowledge in teaching using different technologies so that they are able to utilize online teaching tools successfully. This includes teaching tools such as WhatsApp and Blackboard which are mostly used at this UoT by both lecturers and students as a teaching and learning tool.
- The study recommends that online teaching at this UoT should meet the needs of the learners and accommodate their different learning styles and paces of learning.
- This investigation suggests that lecturers use blended learning, to ensure that they cater for the needs of diverse students, even those who are not in favour of online learning such as WhatsApp.
- The researcher recommends that for the teaching and learning at the UoT where this study was conducted, lecturers are strongly encouraged to include the use of a variety of other social media besides WhatsApp to facilitate their teaching and learning. The other social media which can be included are: Facebook, Instagram, Twitter and Vimeo.

5.2.2. Recommendations for **policy**

- Since the world is moving towards the Fourth Industrial Revolution, and especially since we have all had to move to working online during the COVID-19 pandemic, social media platforms are now dominating in HEIs. This move has been welcomed by students and lecturers, hence, this study recommends that the Teaching and Learning Policies of HEI's should clearly stipulate the inclusion of using a variety of social media so that this pedagogy becomes orthodox, routine and legal.
- There are several advantages and disadvantages that lecturers often experience when facilitating teaching online. The same applies to students, who are witnessing positive and negative experiences when learning using online platforms. It is recommended that the Teaching and Learning Policy be updated

to suggest ways to promote the positive impact, and reduce the negative impact, of their selected technologies for teaching and learning.

- Although social media is mostly used in education today, especially since COVID-19, HEI's cannot run away from the fact that face-to-face teaching will always play a critical role in student development. However, many students have suggested that they would prefer to miss class and catch up their notes using WhatsApp. This research recommends that the Teaching and Learning Policy should include strict rules against absenteeism.

5.2.3. Recommendations for further research

- This study focused upon one UoT only and one Faculty of Education; it is recommended that further research should involve colleges, high schools, primary schools, and other faculties in this UoT.
- By observing the results of this project, the investigator recommends that this study could be extended to involve other role players in the teaching and learning area such as Information Technology (IT) support, HOD's and Deans and increase the number of participants.
- This study investigated the case of WhatsApp utilization as a teaching and learning tool at a UoT. The recommendation is that this application and related research into it could be used in investigating WhatsApp as a School Management Tool.
- This study recommends that the use of WhatsApp as a teaching and learning tool be investigated in the teaching in Special Schools, especially deaf schools. This platform could improve their learning experiences.

5.3. CONCLUSION

The aim of this study was to explore ways in which lecturers and students utilize WhatsApp for teaching and learning at a UoT for communication purposes, as an educational tool, student's preferences for using WhatsApp to using Blackboard and the challenges that were encountered by both the 16 students and the two lecturers. There has been a dearth of information on these topics and therefore the researcher wanted to fulfil his aims of this research and to fill the knowledge gap. The results of this study show that five conclusions emerged to answer the research questions.

First, there have been many examples that indicate both lecturers and students have used WhatsApp in their teaching and learning in a beneficial manner. Linking these findings to the Garrison et al. (2010) theory of Col was used to explain how the collaborative constructivism of learning occurred cognitively, socially and through teaching. When we reflect on these everyday life issues we begin to engage with more critical, rigorous scientific thinking.

However, both students and lecturers commented on some limitations of using WhatsApp in class. These included: being on WhatsApp regularly distracted them from their actual work as they were constantly receiving messages from each other. This prompted them to go through their data bundles more regularly. Since the UoT has a diverse group of students, cultural differences were disturbing some students who said they could not understand their language nor their jokes. Sometimes students complained of being bullied on the platform.

Although this study was completed by the time the COVID-19 pandemic hit the world, many students and lecturers are using WhatsApp as a regular teaching and communication tool today.

REFERENCES

- Aburezeq, I. M. & Ishtaiwa, F. F. 2013. The impact of WhatsApp on interaction in an Arabic language teaching course. *International Journal of Arts & Sciences*, 6 (3): 165-180.
- Action Plan. 2019. *Towards the realisation of schooling 2030*. Taking forward South Africa's National Development Plan 2030. <https://www.education.gov.za/Portals/0/Documents/Publications/Action%20Plan%202019.pdf?ver=2015-11-11-162424-417> [19 February 2018].
- Acton, B. & Koum, J. 2014. *WhatsApp blog*. <https://www.blog.whatsapp.com/>. [12 November 2018].
- Agarwal, A. & Alrowaili, M. G. 2020. Prospects and challenges of social media (WhatsApp) usage over University Learning Management System (LMS) as an E-learning tool among university students, Kingdom of Saudi Arabia (KSA). *Pakistan Journal of Medical & Health Sciences*, 14(2): 2-11.
- Ahmed, S. S. & Hassan, A. Q. 2017. A study on the rationale of social media use by the students of King Khalid University. *English Language Teaching*, 10(8): 43-50.
- Aizenkot, D. & Kashy-Rosenbaum, G. 2018. Cyberbullying in WhatsApp classmates' groups evaluation of an intervention program implemented in Israeli elementary and middle schools. *New Media & Society*, 20(12): 4709-4727.
- Akakandelwa, A., Moonga, A. L. & Changala, M. 2018. Usage of WhatsApp messenger among final year undergraduate adult education students at the university of Zambia and its perceived impact on student academic performance. *Journal of African Interdisciplinary Studies*, 2(8): 4-8.
- Akintola, M. A. 2017. University undergraduates' use of social media in Kwara State, Nigeria. Master's Thesis. University of Ilorin, Ilorin.
- Aktas, B. Ç. & Can, Y. 2019. The effect of "WhatsApp" usage on the attitudes of students toward English self-efficacy and English courses in foreign language education outside the School. *International Electronic Journal of Elementary Education*, 11(3): 247-256.
- Akyol, Z. & Garrison, D. R. 2011. Understanding cognitive presence in an online and blended community of inquiry: assessing outcomes and processes for deep approaches to learning. *British Journal of Educational Technology*, 42(2): 233-250.
- Akyol, Z., Ice, P., Garrison, D. R. & Mitchell, R. 2010. The relationship between course socio-epistemological orientations and student perceptions of the community of inquiry. *The Internet and Higher Education*, 13(1-2):66-68.

-
- Akyol, Z., Garrison, D. R. & Ozden, M. Y. 2009. Online and blended communities of inquiry: Exploring the developmental and perceptual differences. *The International Review of Research in Open and Distributed Learning*, 10(6): 65-83.
- Alenazi, A. A. 2017. WhatsApp messenger as a learning tool: an investigation of pre-service teachers' learning without instructor presence. *Journal of Education and Training Studies*, 6(1): 1-8.
- Ali, R., Sameemkardar, M. & Zia, M. W. 2020. Topic of research: use of WhatsApp messenger among LIS students of University of Karachi, Pakistan. *Library Philosophy and Practice*, 11(1).
- Alqahtani, S. M., Bhaskar, C. V., Vadakalur Elumalai, K. & Abumelha, M. 2018. WhatsApp: an online platform for university-level English language education. *Arab World English Journal (AWEJ)*, 9(5): 108-121.
- Al-Qaysi, N., Mohamad-Nordin, N. & Al-Emran, M., 2020. Developing an educational framework for using WhatsApp based on social constructivism theory. *In Recent Advances in Intelligent Systems and Smart Applications*. Springer: Cham-Switzerland.
- Altaany, F. H. 2017. Usage WhatsApp application for e-learning and its impact on academic performance in Irbid National University in Jordan. *International Journal of Applied Engineering Research*, 10(19): 75-90.
- Alturki, U. T. & Aldraiweesh, A. 2016. Evaluating the usability and accessibility of LMS "Blackboard" at King Saud University. *Contemporary Issues in Education Research (CIER)*, 9(1): 33-44.
- Ammaarah Kootbodien, M. S. S. A. 2017. The effectiveness of WhatsApp as an interpersonal communication medium among Abu Dhabi university students. *International Journal of Media, Journalism and Mass Communications*, 3(1): 11-19.
- Amry, A. B. 2014. The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal*, 10(22): 116-136.
- Appleton-Knapp, S. L. & Krentler, K. A. 2006. Measuring student expectations and their effects on satisfaction: the importance of managing student expectations. *Journal of Marketing Education*, 28(3): 254-264.
- Arbuthnott, K. D. & Krätzig, G. P. 2015. Effective teaching: sensory learning styles versus general memory processes. *Innovative Teaching*, 4(2): 1-9.
- Armellini, A. & De Stefani, M. 2016. Social presence in the 21st century: an adjustment to the community of inquiry framework. *British Journal of Educational Technology*, 47(6): 1202-1216.
- Arumugam, B., Sowmiya, K. R. & Krishna, K. 2017. Educational networking one-year experience with WhatsApp discussion for medical students. *Global Journal for Research Analysis*, 6(1): 685-688.

-
- Bansal, T. & Joshi, D. 2014. A study of students experiences of WhatsApp mobile learning. *Global Journal of Human-Social Science Research*, 14(4): 1-8.
- Bard, D. M., Joseph, J. I. & van Helmond, N. 2019. Cuff-less methods for blood pressure telemonitoring. *Frontiers in Cardiovascular Medicine*, 2(6): 631-642. <https://www.doi.org/10.3389/fcvm.2019.00040> [30 April 2019].
- Barhoumi, C. 2015. The effectiveness of WhatsApp mobile learning activities guided by activity theory on students' knowledge management. *Contemporary Educational Technology*, 6(3): 221-238.
- Berewot, J. & Fibra, A. 2020. WhatsApp messenger among higher education students: a study on WhatsApp messenger usage for project learning. International Conference on Science Education and Technology (ICOSETH) Surakarta, Indonesia, 2019, 23 November 2019.
- Bernal-Ruiz, C., Rosa-Alcazar, A. & González-Calatayud, V. 2019. Development and validation of the WhatsApp negative impact scale (WANIS). *Anales De Psicología Annals of Psychology*, 35(2): 242-250.
- Bimray, P., Jooste, K. & Julie, H. 2019. Professionalism experiences of undergraduate learner nurses during their 4-year training programme at a higher education institution in the Western Cape, South Africa. *Curationis*, 42(1): 1-8.
- Boshielo, A. 2014. The impact of blackboard as a learning management system (LMS) for University of Limpopo students. Doctoral dissertation, University of Limpopo, Mankweng.
- Bouhnik, D. & Dshen, M. 2014. WhatsApp goes to school: mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, (13): 217-231.
- Boulos, M. N. K., Giustini, D. M. & Wheeler, S. 2016. Instagram and WhatsApp in health and healthcare: an overview. *Future Internet*, 8(3). <https://www.doi.org/10.3390/fi8030037> [22 August 2020].
- Buhari, S. R., Ahmad, G. I. & HadiAshara, B. 2014. Use of social media among students of Nigerian Polytechnic. *International Conference on Communication, Media, Technology and Design*, 2(4): 24-26.
- Bushnell, C., Kemp, N. & Martin, F. H. 2011. Text-messaging practices and links to general spelling skill: A study of Australian children. *Australian Journal of Educational & Developmental Psychology*, (11): 27-38.
- Camarinha-matos, L. M. & Afsarmanesh, H. 2008. Concept of collaboration. Putnik, G. D & Cruz-Cunha, M. (Eds.), *Encyclopaedia of Networked and Virtual Organizations*, 311-315. <https://www.doi.org/10.4018/978-1-59904-885-7.ch041> [20 November 2020].
- Cape Peninsula University of Technology. 2020. University of Technology vision, 2020. <https://www.cput.ac.za/about/vision> [17 April 2017].
-

-
- Carbonell, X., Chamarro, A., Oberst, U., Rodrigo, B. & Prades, M. 2018. Problematic use of the internet and smartphones in university students: 2006–2017. *International Journal of Environmental Research and Public Health*, 15(3): 475 - 486.
- Cetinkaya, L. 2017. The impact of WhatsApp use on success in education process. *International Review of Research in Open and Distributed Learning*, 18(7): 60-74.
- Chaka, G. J. & Govender, I. 2017. Students' perceptions and readiness towards mobile learning in colleges of education: A Nigerian perspective. *South African Journal of Education*, 37(1): 1-12.
- Cilliers, L. & Van Niekerk, E. 2017. Lecturers' perceptions on Blackboard: An investigation of Blackboard usage in a nursing department at a traditional university. In T.C. Huang, R. Lau, Y. M. Huang, M. Spaniol & C. H. Yuen (Eds), *Emerging Technologies for Education*. Cham: Springer.
- Cleveland-Innes, M. & Emes, C. 2005. Principles of a learner centered curriculum: Responding to the call for change in higher education. *Canadian Journal of Higher Education*, 35(4): 85-110.
- Cleveland-Innes, M. & Campbell, P. 2012. Emotional presence, learning, and the online learning environment. *The International Review of Research in Open and Distributed Learning*, 13(4): 269-292.
- Coe, R. 2012. The nature of educational research-exploring the different understandings of educational research. In I. J. Arthur, M. Waring, R. Coe & L. V. Hedges (Eds), *Research methods & methodologies in education*. Los Angeles: Routledge.
- Cohen, L., Manion, L. & Morrison, K. 2007. *Research methods in education*. 6th ed. New York: Routledge.
- Creswell, W. J. 2012. *Research design: qualitative, quantitative, and mixed methods approaches*. 3rd ed. California: SAGE Publications.
- Creswell, W. J. 2013. *Educational research: planning, conducting and evaluating quantitative and qualitative research*. 3rd ed. New Jersey: Merrill Prentice Hall.
- Creswell, J. W. 2014. Research design. *Qualitative, quantitative and mixed method approach*. 4th ed. Los Angeles: SAGE Publications.
- Creswell, J. W. 2015. *A conscience introduction to mixed-method research*. Los Angeles: SAGE Publications.
- Dawson, R. Hancock, H. & Algozzine, B. 2017. *Doing case study research: A practical guide for beginning researchers*. 3rd ed. Amsterdam: Teachers College Press.
- Department of Basic Education Action Plan. 2019. *The integrated strategic planning framework for teacher education and development (ISPFTED)*. Pretoria: Government Printers.

-
- De Vos, A. S., Delpont, C. S. L., Fouché, C. B. & Strydom, H., 2011. *Research at grassroots: a primer for the social science and human professions*. Pretoria: Van Schaik Publishers.
- Dilshad, R. M. & Latif, M. I. 2013. Focus group interview as a tool for qualitative research: An analysis. *Pakistan Journal of Social Sciences (PJSS)*, 33(1): 191-198.
- Diogo, P., Rodrigues, J., Caeiro, M. J. & Sousa, O. L. 2016. The role in clinical supervision of nursing students: determinant in the development of emotional skills. *Academia Journal of Educational Research*, 4(5): 075-082.
- Dixon, M., Kuhlhorst, M. & Reiff, A. 2006. Creating effective online discussions: optimal instructor and student roles. *Journal of Asynchronous Learning Networks*, 10(3): 15–28.
- Dyavarishetty, P. V. & Patil, D. C. 2017. An interventional study to assess the effectiveness of ‘WhatsApp’ as a teaching learning tool in community medicine. *International Journal of Community Medicine and Public Health*, 4(7): 2564-2569.
- Dzvapatsva, G. P., Mitrovic, Z. & Dietrich, A. D. 2014. Use of social media platforms for improving academic performance at further education and training colleges. *South African Journal of Information Management*, 16(1): 1-7.
- Eberechukwu, A. S. & Queendarline, N. N. 2018. WhatsApp utilization and academic performance of computer in education trainee teachers in University of Port-Harcourt. *International Journal of Education, Learning and Development*, 6(5): 15-25.
- El-Sofany, H. F., El-Seoud, S.A. & Farouk, R. T. H. 2018. Studying the effect of using e-learning through secure cloud computing systems. In International Conference on Interactive Collaborative Learning, Kos, Greece, 25-28 September 2018.
- Eren, A. & Tekinarслан, E. 2012. Prospective teachers' metaphors: teacher, teaching, learning, instructional material and evaluation concepts. *International Journal of Social Sciences & Education*, 3(2): 435-445.
- Etikan, I., Musa, S. A. & Alkassim, R. S. 2016. Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1): 1-4.
- Farquhar, J. D. 2012. What is case study research? in: *case study research for business*. London: SAGE Publications.
- Fattah, S. F. E. S. A. 2015. The effectiveness of using WhatsApp messenger as one of mobile learning techniques to develop students' writing skills. *Journal of Education and Practice*, 6(32): 115-127.
- Fauzi, A. R. 2019. The development of WhatsApp group discussion to solve the limitation of lecture-student's interaction at class. International Conference of Computer and Informatics Engineering, Banyuwangi, Indonesia, 10 - 11 Sep 2019.

-
- Fernandez-Robin, C., Yanez, D. & McCoy, S. 2019. Intention to use WhatsApp in artificial intelligence-scope and limitations. *Intech Open*.
<https://www.10.5772/intechopen.8199> [16 January 2019].
- Fiscone, G. D. L., Pizzolante, R., Castiglione, A. & Palmieri, F. 2020. *Network forensics of WhatsApp: a practical approach based on side-channel analysis*. In International Conference on Advanced Information Networking and Applications, Caserta, Italy, 15-17 April 2020.
- Flick, U. 2018a. *Qualitative data collections*. Los Angeles: SAGE Publications.
- Flick, U. 2018b. *Introduction to qualitative research*. 5th ed. London: SAGE Publications.
- Gachago, D., Strydom, S., Hanekom, P., Simons, S. & Walters, S. 2015. Crossing boundaries: lectures' perspectives on the use of WhatsApp to support teaching and learning in higher education. *Progressio*, 37(1): 172-187.
- Garrison, D. R. 2007. Online community of inquiry review: social, cognitive and teaching presence issues. *Journal of Asynchronous Learning Networks*, 11(1): 61–72.
- Garrison, D. R. 2009. *Roles of authentic activities for online learning*. Conference on Distance Teaching & Learning, Madison, 4-7 August 2009.
- Garrison, D. R., Cleveland-Innes, M. & Fung, T. 2004. Student role adjustment in online communities of inquiry: Model and instrument validation. *Journal of Asynchronous Learning Networks*, 8(2): 61-74.
- Garrison, D. R. & Anderson, T. 2003. *E-learning in 21st century: a framework for research and practice*. London: Routledge Falmer.
- Garrison, D., Anderson, T. & Archer, W. 2010. *The first decade of the community of inquiry framework*. Edmonton: Elsevier.
- Garrison, D. R. & Arbaugh, J. B. 2007. Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, 10(3):157-172.
- Gasaymeh, A. M. M. 2017. University students use of WhatsApp and their perceptions regarding its possible integration into their education. *Global Journal of Computer Science and Technology*, 1(17): 1-11.
- Gon, S. & Rawekar, A. 2017. Effectively of e-learning through WhatsApp as a teaching tool. *MVP Journal of Medical Sciences*, 4 (1): 19-25.
- Guo, X., France, M. & Cowley, P. 2020. *Using WhatsApp to enhance students' learning: a cohort analysis at a UK university*. Proceedings of 14th International Technology, Education and Development, Valencia, Spain, 2-4 March 2020.
- Hamad, M. M. 2017. Using WhatsApp to enhance students' learning of English Language experience to Share. *Higher Education Studies*, 7(4):74-87.

-
- Heinze, A. & Procter, C. 2004. *Reflections on the use of blended learning*. Education in a Changing Environment Conference Proceedings: Education development unit. University of Salford, Manchester, 13-14 September, 2004.
https://www.ece.salford.ac.uk/proceedings/papers/ah_04.rtf [20 July 2019].
- Hendry, G. D., Frommer, M. & Walker, R. A., 1999. Constructivism and problem-based learning. *Journal of Further and Higher Education*, 23(3): 369-371.
- Henning, E., Rensburg, W. & Smit, B. 2004. *Finding your way in qualitative research*. Pretoria: Van Schaik.
- Hussain, Z., Mahesar, R., Shah, R. & Memon, N. A. 2017. WhatsApp usage frequency by university students: A case study of Sindh University. *Engineering Science and Technology International Research Journal*, 1(4): 5-20.
- Irfan, M. & Dhimmar, S. 2019. Impact of WhatsApp messenger on the university level students. *A Psychological Study*, 6 (1): 50-65.
- Ince, S. & Irwin, J. 2015. *LibGuides CMS eReserves: Simplify delivering course reserves through Blackboard interlending and document supply*. Interviewing. California: SAGE Publications.
- Ismail, A. M. A. & Salih, A. A. 2018. The impact of blackboard LMS on teaching research method course for technology studies graduate students at the Arabian Gulf University. *International Journal of Information and Education Technology*, 8(2):81-94.
- Jan, S. R., Ullah, F., Ali, H. & Khan, F. 2016. Enhanced and effective learning through mobile learning an insight into student's perception of mobile learning at university level. *International Journal of Scientific Research in Science, Engineering and Technology*, 2(2): 674 - 681.
- Kaendler, C., Wiedmann, M., Rummel, N. & Spada, H. 2014. Teacher competencies for the implementation of collaborative learning in the Classroom: A Framework and Research Review. *Educational Psychology Review*, (27): 1-32.
- Kayumovich, K. O. 2020. Particular qualities use of social media in digital tourism. *Journal of Management Value & Ethics*, (20)10: 28-35.
- Ke, F. 2010. Examining online teaching, cognitive, and social presence for adult students. *Computers & Education*, 55(2): 808-820.
- King, N. & Horrocks, C. 2010. *Interviews in qualitative research*. London: SAGE Publications.
- Kiran, P. & Srivastava, A. 2018. WhatsApp and its impact on social life of youngsters: a perspective. *Management Insight*, 14(1): 57-64.

-
- Korikana, A. 2020. Slow learners-a universal problem and providing educational opportunities to them to be a successful learner. *International Journal of Social Sciences*, 6(1): 29-42.
- Kreijns, K., Van Acker, F., Vermeulen, M. & Van Buuren, H. 2014. Community of inquiry: social presence revisited. *E-learning and Digital Media*, 11(1): 5-18.
- Kumar, S., Dawson, K., Black, E. W., Cavanaugh, C. & Sessums, C. D. 2011. Applying the community of inquiry framework to an online professional practice doctoral program. *International Review of Research in open and Distributed Learning*, 12(6): 126-142.
- Kustijono, R. & Zuhri, F. 2018. *The use of Facebook and WhatsApp application in learning process of physics to train students' critical thinking skills*. In IOP Conference Series: Materials Science and Engineering, 22–24 June 2018, Suzhou, Jiangsu, China.
- Kvale, S. & Brinkmann, S. 2009. *Interviews: Learning the craft of qualitative research*. California: SAGE Publications.
- Lapan, S. D., Quartaroli, M. T. & Riemer, F. J. 2012. *Qualitative research: an introduction to methods and designs*. San Francisco: Jossey-Bass.
- Leavy, P. 2017. *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. New York: Guilford Publications.
- Lincoln, S. Y. 2010. "What a Long, Strange Trip It's Been": Twenty-five years of qualitative and new paradigm research. *Qualitative Inquiry*, 16(1): 3–9.
- Luaran, J., Jain, J. & Abd Rahman, N. 2016. The use of WhatsApp group in class-related information sharing through academic discussion/Johan@ Eddy Luaran, Jasmine Jain and Norilyani Abd Rahman. *International Journal on E-Learning and Higher Education*, 5(1): 176-194.
- Lu, J. & Churchill, D. 2014. Using social networking environments to support collaborative learning in a Chinese university class: interaction pattern and influencing factors. *Australasian Journal of Educational Technology*, 30(4): 472-486.
- Maíz-Arévalo, C. 2018. Emotional self-presentation on WhatsApp: Analysis of the profile status. *Russian Journal of Linguistics*, 22(1): 144-160.
- Makokha, G. L. & Mutisya, D. N. 2016. Status of e-learning in public universities in Kenya. *International Review of Research in Open and Distributed Learning*, 17(3): 341-359.
- Marshall, C. & Roosman, G. B. 2016. *Designing qualitative research*. 6th ed. Massachusetts: SAGE Publications.
- Mazana, M. Y. 2018. Social media in the classroom: WhatsApp a new communication tool For enhanced class interactions. *Business Education Journal*, 2(1): 1-8.

-
- Mbukusa, N. R. 2018. Perceptions of students on the use of WhatsApp in teaching methods of English as second language at the University of Namibia. *Journal of Curriculum and Teaching*, 7(2): 112-119.
- Mears, C. 2017. Chapter 21: In-depth interviews. In Coe, R., Waring M., Hedges, L. & Arthur, J. (Eds), *Research methods & methodologies in education*. 2nd ed. London: SAGE Publications.
- Meda, L. & Makura, A. H. 2017 (Eds). *Technology driven curriculum for 21st century higher education students in Africa*. Bamenda: Research and Publishing Common Initiative Group. ISBN 9789956762477.
- Mekoa, I. & Busari, D. 2018. Social cohesion: Its meaning and complexities. *Journal of Social Sciences*, 14(1): 107-115.
- Mellati, M. & Khademi, M. 2015. The impacts of distance interactivity on learners' achievements in online mobile Language learning: Social software and participatory learning. *International Journal of Web-Based Learning and Teaching Technologies*, 10(3): 19-35.
- Merriam, S. B. 2009. *Qualitative research: A guide to design and implementation: Revised and expanded from, 'qualitative research and case study applications in education'*. San Fransico: Jossey-Bass.
- Merriam, S. B. & Tisdell, S. B. 2016. *Qualitative research: A guide to design and implementation*. 4th ed. San Francisco: Jossey-Bass.
- Mistar, I. B. & Embi, M. A. 2016. Students' perception on the use of WhatsApp as a learning tool in ESL classroom. *Journal of Education and Social Sciences*, (4): 96-104.
- Mofolere, K. F. 2016. WhatsApp and information sharing: Prospect and challenges. *International Journal of Social Science and Humanities Research*, 4(1): 615-625.
- Moodley, P., Singh, R. J. & Cloete, J. 2015. Exploring student perceptions of using the learning management system and social media for blended learning at a rural university. *Progressio*, 37(1): 68-82.
- Motala, S. & Menon, K. 2020. In search of the 'new normal': Reflections on teaching and learning during COVID-19 in a South African university. *Southern African Review of Education*, 26(1): 80-99.
- Mtebe, J. S. & Raphael, C. 2018. Key factors in learners' satisfaction with the e-learning system at the University of Dar es Salaam, Tanzania. *Australasian Journal of Educational Technology*, 34(4): 107-122.
- Muthaiyan, M. & Kanchana, K. 2016. A study on developing reading skills of engineering students through WhatsApp as motivational strategy. *International Journal of English Research*, 2(3): 01- 04.

-
- Mwakapina, J. W., Mhandeni, A. S. & Nyinondi, O. S. 2016. WhatsApp mobile tool in second language learning: opportunities, potentials and challenges in higher education settings in Tanzania. *International Journal of English Language Education*, 4(2): 60-70.
- Naidoo, J. & Kopung, K. J. 2016. Technology for the 21st century: exploring the use of WhatsApp instant messaging for pre-service teachers' learning of mathematics. *International Journal for Technology in Mathematics Education*, 27(2): 83-97.
- Nanda, M. S. 2019. Role of WhatsApp in improving learning among medical students. *Indian Journal of Medical Science and Public Health*, 8(2): 165-9.
- Napratilora, M., Lisa, H. & Bangsawan, I. 2020. Using WhatsApp as a learning media in teaching reading. *Journal Kependidikan MI*, 6(2): 116-125.
- Nawaila, M. B. & Bicen, H. 2018. WhatsApp as a tool for distance learning. *Ponte Journal*, 74(1). <https://www.10.21506/j.ponte.2018.1.36> [17 November 2020].
- Neuman, W. L. 2014. *Social research methods: Qualitative and quantitative approaches*. 7th ed. Harlow: Pearson.
- Newby, T. J., Stepich, D. A., Lehman, J. D. & Russell, J. D. 2000. *Instruction Technology for Teaching and Learning*. Upper Saddle River, NJ: Merrill.
- Ng'ambi, D., Brown, C., Bozalek, V., Gachago, D. & Wood, D. 2016. Technology enhanced teaching and learning in South African higher education—A review of a 20-year journey. *British Journal of Educational Technology*, 47(5): 843-858.
- Nuraeni, C. & Nurmalia, L. 2020. Utilizing WhatsApp application in English language learning classroom. *Journal of English Language, Literature, and Teaching*, 4(1): 89-94.
- Nuuyoma, V., Mhlope, N. J. & Chihururu, L. 2020. The use of WhatsApp as an educational communication tool in higher education: experiences of nursing students in Kavango East, Namibia. *International Journal of Higher Education*, 9(5): 105-114.
- Nyabawa, R. F. 2016. Technology in learning: Blackboard usage and its impact on academic performance: a case for universities in Lesotho. *International Journal of Humanities and Management Sciences (IJHMS)*, 4(5): 455-461.
- Onwuegbuzie, A. J. & Frels, R. 2016. *A Seven steps to a comprehensive literature review: A multimodal and cultural approach*. London: SAGE Publications.
- Orel, A., Campbell, M., Wozencroft K., Leong, E. & Kimpton, M. 2017. Exploring university students' coping strategy intentions for cyberbullying. *Journal of Interpersonal Violence*, 32(3): 446-462.
- Pachigolla, V. S. & Pant, M. M. 2016. *Impact analysis of teaching learning using WhatsApp*. Conference Proceedings & Working Papers. 11-30 June 2016, Commonwealth of Learning (COL) and Open University Malaysia (OUM).

-
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N. & Hoagwood, K. 2015. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5): 533-544.
- Palladino, B. E., Menesini, E., Nocentini, A., Luik, P., Naruskov, K., Ucanok, Z., Dogan, A., Schultze-Krumbholz, A., Hess, M. & Scheithauer, H. 2017. Perceived severity of cyberbullying: Differences and similarities across four countries. *Frontiers in Psychology*, <https://www.10.3389/fpsyg.2017.01524> [20 November 2019].
- Palys, T. 2008. *Purposive sampling: The sage encyclopaedia of qualitative research methods*. Los Angeles: SAGE Publications.
- Park, C. L. 2009. Replicating the use of a cognitive presence measurement tool. *Journal of Interactive Online Learning*, 8(2): 140–155.
- Piaget, J. 1972. *The psychology of the child*. New York: Basic Books.
- Pimmer, C. & Rambe, P. 2018. The inherent tensions of “instant education”: A critical review of Mobile Instant Messaging. *International Review of Research in Open and Distributed Learning*, 19(5): 219-237. <https://www.doi.org/10.19173/irrodl.v19i5.3765> [27 November 2018].
- Prawat, R. S. 2000. The two faces of deyeayan pragmatism: Inductionism versus social constructivism. *Teachers College Record*, 102(4): 805-840.
- Raghuram, P. 2019. WhatsApp use among African international distance education (IDE) students: Transferring, translating and transforming educational experiences. *Learning, Media and Technology*, 44(3): 267-282.
- Raiman, L., Antbring, R. & Mahmood, A. 2017. WhatsApp messenger as a tool to supplement medical education for medical students on clinical attachment. *BMC Medical Education*, 17(1): 7-15.
- Rajab, H. & Rashid, S. 2016. Unmonitored students self-created WhatsApp groups in distance learning environments: a collaborative learning tool or cheating technique. *International Journal of Research Studies in Educational Technology*, 5(2): 71-82.
- Ramabu, T. J. 2019. WhatsApp as part of a blended learning model to help programming novices. *International Journal of Computer and Information Engineering*, 13(5): 250-254.
- Rambe, P. 2015. *Towards a mobile flipped classroom: using mobile instant messaging to enhance distributed learning of academically challenged students*. 1st International Conference on Higher Education Advances (HEAd'15), Valencia, Spain, 24-26 June 2014.
- Rambe, P & Bere, A. 2013. Using Mobile Instant Messaging to leverage learner participation and transform pedagogy at a South African University. *British Journal of Educational Technology*, 44(4): 544 – 561.

-
- Rambe, P. & Chipunza, C. 2015. *Using mobile devices to leverage student access to collaboratively-generated resources: A case of WhatsApp instant messaging at a South African University*. International Conference on Advanced ICT (Information and Communication Technology) for Education Hainan, China, 20-22, September 2013.
- Rambe, P., Chipunza, C. & Ng'ambi, D. 2020. Using WhatsApp for co-creation of learning resources: A case of a South African university. *The Journal for Transdisciplinary Research in Southern Africa*, 16(1): 1-15.
- Riley, A. 2013. The use of Blackboard as a tool for the teaching and assessment of large classes in Mathematics education: A case study of second year level Bachelor of Education students in one university in South Africa. Doctoral dissertation, University of Fort Hare, Alice.
- Riyanto, A. 2013. *English language learning using WhatsApp application*. <https://www.akhmadrivantoblog.wordpress.com/2013/07/21/english-language-learning-using-WhatsApp-application/> [20 July 2018].
- Robles, H., Guerrero, J., LLinas, H. & Montero, P. F. 2019. Online teacher-students interactions using WhatsApp in a law course. *Journal of Information Technology Education: Research*, 18: 231-252.
- Rogers, P. & Lea, M. 2005. Social presence in distributed group environments: The role of social identity. *Behavior & Information Technology*, 24(2): 151-158.
- Rosenberg, H. & Asterhan, C. S. 2018. "WhatsApp, teacher?" student perspectives on teacher-student WhatsApp interactions in secondary schools. *Journal of Information Technology Education: Research*, 1(17): 205-226.
- Sam, D. L., Bruce, D., Agyemang, C. B., Amponsah, B. & Arkorful, H. 2019. Cyberbullying victimization among high school and university students in Ghana. *Deviant Behavior*, 40(11): 1305-1321.
- Sayan, H. 2016. Affecting higher students learning activity by using WhatsApp. *European Journal of Research and Reflection in Educational Sciences*, 4(3): 1-6.
- Sequeira, A. H. 2012. *Introduction to concepts of teaching and learning*. <https://www.dx.doi.org/10.2139/ssrn.2150166> [21 September 2018].
- Shanmugapriya, S. & Priya, A. 2016. A study on impact of using WhatsApp on reduction of stress. *International Journal of Current Research and Modern Education*, 1(11): 2455-5428.
- Shariffuddin, S. A., Shaaidi, W. R. W. & Hashim, S. M. 2017. Social networks as instructional tools beyond a classroom. *International Journal of Advanced and Applied Sciences*, 4(12): 185-192.
- Shenton, A. K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2): 63-75.

-
- Shinge, J. & Kotabagi, S. 2020. To improve presentation skills of the engineering students through a vis-à-vis evaluation approach-a pedagogical experiment. *Procedia Computer Science*, 172: 350-356.
- Simui, F., Mwewa, G., Chota, A., Kakana, F., Mundende, K., Thompson, L., Mwanza, P., Ndhlovu, D. & Namangala, B. 2018. “WhatsApp” as a learner support tool for distance education: Implications for policy and practice at University of Zambia. *Zambia ICT Journal*, 2(2): 36-44.
- Sivakumar, R. 2016. WhatsApp in education. *Glokalde E-Journal of Udeeewana*, 2 (2): 18-22.
- South Africa, National Curriculum Statement (NCS). 2011. *Curriculum and Assessment Policy Statement. English home Language. Further Education and Training Phase Grades 10-12*. Pretoria. Government Printers.
- South Africa. National Development Plan. 2030. *Our future-make it work*. National Planning Commission. Design & Layout: The Idea & Craft Collective. <https://www.gov.za/issues/national-development-plan-2030> [20 January 2017].
- Strachan, R. & Aljabali, S. 2015. *Investigation into undergraduate international students' use of digital technology and their application in formal and informal settings*. 12th International Conference on Cognition and Exploratory Learning in Digital Age. 24- 26 October 2015, Maynooth, Ireland.
- Stander, J., Grimmer, K. & Brink, Y. 2019. Learning styles of physiotherapists: A systematic scoping review. *BMC Medical Education*, 19(1): 1-9.
- Susilo, A. 2014. *Exploring Facebook and WhatsApp as supporting social network applications for English learning in higher education*. Conference On Professional Development in Education, 11-12 June 2014, Park Hotel, Banfung-Indonesia.
- Sustainable Development Goals. 2019. *The South Africa I know; The home I understand: Country report 2019*. Pretoria: Statistics South Africa.
- Sutiyatno, S. 2018. The effect of teacher’s verbal communication and non-verbal communication on students’ English achievement. *Journal of Language Teaching and Research*, 9(2): 430-437.
- Swart, A. J. & Meda, L. 2017. Graduate attributes in an electrical engineering curriculum: A case study. *International Journal of Engineering Education*, 33(2): 653–661.
- Ta’amneh, M. A. A. A. 2017. The effect of using WhatsApp messenger in learning English language among university students. *International Research in Education*, 5(1): 143-151.
- Tawiah, Y. S., Nondzor, H. E. & Alhaji, A. 2014. Usage of WhatsApp and voice calls (phone call): Preference of Polytechnic students in Ghana. *Science Journal of Business and Management*, 2(4): 103-108.

-
- Taylor, S. J., Bogdan, R. & DeVault, M. 2015. *Introduction to qualitative research Methods: A guidebook and resource*. New Jersey: John Wiley & Sons.
- Thanh, N. C. & Thanh, T. T. 2015. The interconnection between interpretivist paradigm and qualitative methods in education. *American Journal of Educational Science*, 1(2): 24-27.
- Tracy, S. J. 2019. *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact*. Chichester: John Wiley & Sons.
- Turnbull, D., Chugh, R. & Luck, J. 2019. Learning management systems: A review of the research methodology literature in Australia and China. *International Journal of Research & Method in Education*, 43 (5): 1-15.
- Ujakpa, M. M., Heukelman, D., Lazarus, V. K., Neiss, P. & Rukanda, G. D. 2018. *Using WhatsApp to support communication in teaching and learning*. Africa Week Conference, 09-11 May 2018, Gaborone, Botswana.
- Urien, B., Erro-Garcés, A. & Osca, A., 2019. WhatsApp usefulness as a communication tool in an educational context. *Education and Information Technologies*, 24(4): 2585-2602.
- Uziak, J., Oladiran, M. T., Lorencowicz, E. & Becker, K. 2018. Students' and instructor's perspective on the use of Blackboard platform for delivering an engineering course. *The Electronic Journal of e-Learning*, 16(1): 1-15.
- Willemse, J. J. 2015. Undergraduate nurses reflections on WhatsApp use in improving primary health care education. *Curationis*, 38(2): 1-7.
- World Development Report. 2018. *Learning: To realise education's promise*. Washington: World Bank Group Report.
- Yeboah, J. & Ewur, G. D. 2014. The impact of WhatsApp messenger usage on students' performance in tertiary institutions in Ghana. *Journal of Education and Practice*, 5(6): 157-164.
- Yin, K. R. 2009. *Case study research: Design and methods*. 4th ed. Los Angeles. SAGE Publications.
- Yin, L. C. 2014. Adoption of WhatsApp instant messaging among students in Ipoh higher education institutions, Master Report, School of education, Languages & Communication, Unpublished Master's Thesis, Wawasan Open University. https://www.woulibrary.wou.edu.my/theses-project/MED2016_CYLEE.pdf. [24 June 2017].
- Yin, R. K. 2011. *Qualitative research from start to finish*. New York: The Guilford Press.
- Yusuf, M., Adams, C. & Dingley, K. 2016. Digital citizen participation within schools in the United Kingdom and Indonesia: An Actor–Network Theory (ANT) perspective. *Information*, 7(4): 69-78.

Zincir, O. 2017. *Knowledge workers' social media usage as a personal knowledge management tool. In harnessing social media as, a knowledge management tool.* <https://www.10.4018/978-1-5225-0495-5.ch006> [20 April 2019].

APPENDICES

APPENDIX 1: FOCUS GROUP DISCUSSION QUESTIONS FOR STUDENTS

Name(s) of applicant(s):	Nkosinomusa Mabaso
Project/study Title:	The utilization of WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology
Is this a staff research project, i.e. not for degree purposes?	Yes / No
If for degree purposes:	Degree: M.Ed Supervisors: Prof. J. Condy Prof .L. Meda Dr C. Tiba.
Data-collection instrument	Interviews
Type of interview	Focus Group Interviews
What are your experiences of using WhatsApp for teaching and learning?	
What are some of the learning activities that you use WhatsApp for?	
How does WhatsApp enable you to learn those activities?	
How else is WhatsApp used in your learning, e. g. Assessment etc?	
Do you find it effective?	
How do you balance WhatsApp usage both as a social media and learning tool?	
What are some of the challenges that you are experiencing with WhatsApp?	
How do you overcome those challenges to ensure maximum involvement in WhatsApp group discussions?	

APPENDIX 2: SEMI-STRUCTURED INTERVIEWS OPEN ENDED QUESTIONS

Name(s) of applicant(s):	Nkosinomusa Mabaso
Project/study Title:	The utilization of WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology.
Is this a staff research project, i.e. not for degree purposes?	Yes / No
If for degree purposes:	Degree: M. Ed Supervisors: Prof. J. Condy, Prof .L. Meda and Dr C. Tiba.
Data-collection instrument	Interviews
Type of interview	Semi-Structured Interviews Open-Ended Questions.
Briefly explain your experiences of using WhatsApp as a teaching tool.	
How long have you been utilising WhatsApp as a teaching tool? Why did you choose WhatsApp, not Blackboard or any other social media like Facebook?	
How do you use WhatsApp for students' learning (informal or formal)? Why? Are there any other ways that you use WhatsApp in students' learning, eg. Assessment,	
Why do you use WhatsApp for teaching in the manner that you do?	
What are some of the learning activities that you give to students to learn using WhatsApp?	
Do you find WhatsApp student collaborations effective in their learning? Why?	
How do you coordinate and ensure that all students are involved in learning the activities?	
Considering that WhatsApp is also used by students as a social media, how do you ensure they do not get distracted when participating in important learning activities?	
Literature shows that some scholars argue that WhatsApp is not ideal for meaningful teaching and learning in higher education as it does not enable students to engage in broad academic discussions. What are your thoughts about that? How do you make your student discussion promote deep learning in your class?	
How do you ensure that students engage in effective academic discussions using WhatsApp?	
What are some of the challenges you are experiencing with WhatsApp as a teaching tool?	
How do you overcome those challenges to ensure effective use of WhatsApp for teaching?	

APPENDIX 3: ETHICAL CLEARANCE CERTIFICATE FROM CAPE PENINSULA UNIVERSITY OF TECHNOLOGY



***For office use only	
Date submitted	31 Jan 2018
Meeting date	n/a
Approval	P/Y√/N
Ethical Clearance number	EFEC 2-2/2018

FACULTY OF EDUCATION


RESEARCH ETHICS CLEARANCE CERTIFICATE

This certificate is issued by the Education Faculty Ethics Committee (EFEC) at Cape Peninsula University of Technology to the applicant/s whose details appear below.

1. Applicant and project details (Applicant to complete this section of the certificate and submit with application as a Word document)

Name(s) of applicant(s):	Nkosinomusa Mabaso		
Project/study Title:	The utilization of WhatsApp for teaching and learning in an initial teacher preparation programme at a University of Technology		
Is this a staff research project, i.e. not for degree purposes?	The research project is for degree purpose		
If for degree purposes the degree is indicated:	Master's in Education		
If for degree purposes, the proposal has been approved by the FRC	Proposal was accepted by the HoD of research (Prof. Du Toit). See attached email		
Funding sources:	N/A		

2. Remarks by Education Faculty Ethics Committee:

This Master's research project is granted ethical clearance valid until 30 January 2020.		
Approved: √	Referred back:	Approved subject to adaptations:
Chairperson Name: Chiwimbiso Kwenda		Date: 17 February 2018
Chairperson Signature: 		
Approval Certificate/Reference: EFEC 2-2/2018		

APPENDIX 4: SIGNED STUDENT CONSENT FORM

I, Thalitha Sherperd Nyeka, have been approached to participate in the research entitled: **Investigating WhatsApp utilisation for learning and teaching at a University of Technology**

I understand that:

- The research is about University of Technology learners and lecturers who are utilising WhatsApp.
- My participation in the research is voluntary.
- My participation in the research will not affect my position as a student / lecturer or my relationship with other colleagues at University.
- I can refuse to answer any questions asked to me
- I can withdraw from the research process at any time.
- The researcher will use information from me in a way that will assure my continued respect amongst other students, lecturers and colleagues.
- The information obtained will be used with the strictest confidentiality.
- My identity will not be disclose in the thesis.
- Photographs of me will not be used in this thesis or any display related to the research.
- Student rights will be respected
- The research interviews will not impact on my working time.

I **agree** to participate in a study that Nkosinomusa Mabaso is conducting.

Name (of participant): Thalitha Sherperd Nyeka

Signature 

Date 30 March 2018

Or

I **do not agree** to participate in this research study

Name (of participant): _____

Signature _____

Date _____

APPENDIX 5: SIGNED LECTURER CONSENT FORM

I, Sandra Johnson, have been approached to participate in the research entitled:
Investigating WhatsApp utilisation for learning and teaching at a University of Technology

I understand that:

- The research is about University of Technology learners and lecturers who are utilising WhatsApp.
- My participation in the research is voluntary.
- My participation in the research will not affect my position as a student / lecturer or my relationship with other colleagues at University.
- I can refuse to answer any questions asked to me
- I can withdraw from the research process at any time.
- The researcher will use information from me in a way that will assure my continued respect amongst other students, lecturers and colleagues.
- The information obtained will be used with the strictest confidentiality.
- My identity will not be disclosed in the thesis.
- Photographs of me will not be used in this thesis or any display related to the research.
- Student rights will be respected
- The research interviews will not impact on my working time.

I **agree** to participate in a study that Nkosinomusa Mabaso is conducting.

Name (of participant): S M Johnson

Signature



Date 24 March 2018

Or

I **do not agree** to participate in this research study

Name (of participant): _____

Signature _____

Date _____