INTERGRATING PROJECT-BASED LEARNING AND MOBILE TECHNOLOGY TO ENHANCE FIRST-YEAR STUDENTS' WRITING IN ENGLISH SECOND LANGUAGE CONTEXTS: A CASE STUDY OF THE UNIVERSITY OF LIMPOPO, SOUTH AFRICA

by

MORONGWA ADOLPHINA CHOSHI

Submitted in accordance with the requirement for

the degree of

DOCTOR OF PHILOSOPHY IN LANGUAGES, LINGUISTICS AND LITERATURE

in the subject

ENGLISH

at the

UNIVERSITY OF SOUTH AFRICA

Supervisor: Professor M. M. K. Lephalala

FEBRUARY 2022

DECLARATION

Name: Morongwa Adolphina Choshi

Student number: 30058899

Degree: Doctor of Philosophy in Language, Linguistics and Literature

Integrating PBL and MT to enhance first-year students' writing in English second language contexts: A case study of University of Limpopo, South Africa

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I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher education institution.

Choshi

24 February 2022

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DEDICATION

This thesis is dedicated to my husband Lesetja Frans Choshi, to my three daughters, Moyagabo, Maropeng and Maphari; to my grandchildren, Itumeleng, Tshegofatso and Rifumo; to my mother Susan Maropeng Masekwameng and to my siblings Paulina Lebese, Joel Masekwameng, Kobela Mpholo as well as Motaso Mathe. Thank you for your love and support.

ACKNOWLEDGEMENTS

ABSTRACT

Academic essay writing also known as student writing, tends to be a challenging task for first-year students in most universities worldwide and in particular for first-year students in English second language contexts in South Africa. This study sought to explore how an integrated project-based learning and mobile technology model can enhance student essay writing in an English second language context. This case study employed a qualitative research approach, and it is underpinned by the Online Collaborative Learning Theory which purports that collaborative learning and knowledge building using technology can promote effective learning. The sampling was purposive, and the data was collected through focus group interviews, observations, and student essays. The findings from the first phase of the study revealed that in general, the first-year English second language students found it difficult and challenging to write English academic essays. The findings from the second and third phases showed that while some students found the integrated project-based learning and mobile technology model challenging because they had very little experience of working collaboratively on a writing project, others, however, found the experience enriching. These students benefitted from the collaboration which involved, interacting, and sharing ideas in their groups, using mobile phones to search for sources as they debated on the relevance of the various sources before agreeing and deciding on the most appropriate and relevant information, then deciding on the best way to approach the essay writing task. To that end, because the students were actively engaged, justifying, and learning from each other, the group essays showed more depth, and the quality of writing was enhanced. The study recommends that the academic essay writing course should be compulsory for first-year English second language students, and it should incorporate the integrated project-based learning and mobile technology model because the students are required to not only focus on the essay writing, but they are also consciously and unconsciously expected to think about, rethink and justify their decisions and actions. This will entail the university amending its policies to allow the students to use their mobile phones in the classroom. In addition, the first-year English lecturers must be trained on how to effectively incorporate the integrated project-based learning and mobile technology model in their teaching to enhance the students' academic essay writing competencies.

KEY TERMS: Integration, project-based learning, mobile technology, English second language, online collaborative learning, mobile learning, collaboration, cellphones, internet

ABBREVIATIONS AND ACRONYMS

AES	Automated Essay Scoring
AW	Academic Writing
AWE	Automated Writing Evaluation
BICS	Basic Interpersonal Communications
CALL	Computer-Assisted Language Learning
CALP	Cognitive Academic Language Proficiency
CMC	Computer Mediated Communication
COVID-19	Coronavirus disease of 2019
CSCL	Computer Supported Collaborative Learning
DE	Distance Education
EFL	English First Language
ESL	English Second Language
HBIs	Historically Black Institutions
HE	Higher Education
HoD	Head of Department
ITS	Intelligent Tutoring System
L2	Second Language
MALL	Mobile Assisted Language Learning
MIC	Mobile Inverted Constructivism
OCL	Online Collaborative Learning
ODL	Open Distance Learning
PBL	Project-Based Learning
PCs	Personal Computers

PBL-MT   Project- Based Learning and Mobile Technology

PDAs   Portable Digital Assistants

RQ   Research Question

SMS   Short Message Services

UNISA   University of South Africa

NCHREC   UNISA College of Human Science Research Ethics Committee

USSD   Unstructured Supplementary Service Data

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CHAPTER 1:   INTRODUCTION

1.1   Introduction

This chapter presents the background of the study, the research problem, the research aim, and the research questions. It also provides, a summary of the theoretical framework, the literature review, and the research methodology. Finally, the significance of the study, the definitions of key words, as well as the study's chapter outlines are addressed.

1.2   Background of the study

Academic essay writing constitutes the primary means by which college and university students across all disciplines are generally required to present their learning and understanding of a subject, and how they are 'assessed on their learning and understanding by subject lecturers who read and mark their written work' (French, 2018:203). However, despite being the primary means by which the students are required to present their learning and understanding of a subject, it also poses numerous challenges to some students Oikarinen-Jabai (2018), particularly those entering the university for the first time (Altinmakas & Byyurt, 2019:89). The challenge is more noticeable in English Second Language (ESL) students and in some cases, it extends to the students in their second, third and even to the postgraduate years of study.

Academic essay writing is described as a formal type of writing that requires the students to cohere to certain conventions or structures which identify the specific type of writing as academic (Pearson, 2022: 2). In addition, Bailey (2021) posits that although there is 'no fixed' standard definition of academic essay writing, it is clearly different from other types of writing such as newspaper writing and fiction because it attempts to be accurate and objective. Some general features that apply to academic essay writing include but are not limited to the use of formal grammar and language structures, logical structures, tone, style, references, objective argument, and language use (Rao, 2018:2).

According to Noroosi, Hatami, van Ginkel, Breman, Mulder (2020:699), academic essay writing requires students to think and write objectively as well as logically. Furthermore, academic essay writing is characterised by the correct use of good

vocabulary, simple and complex sentences, citations, style, tone, and good sentence structure. Moreover, the extent and continuing speed of development and advancement in technology, in the last few years, also requires the students to develop competencies that not only focus on their individual writing capabilities, but also demand that they incorporate technology and approach writing as a collaborative activity that focuses on problem solving. That also helps to enhance their writing competencies, their critical thinking skills and learning in general.

To this end, this study aims to examine how an integrated Project-Based Learning (PBL) and Mobile Technology (MT) model can enhance the academic essay writing competencies of university students in an ESL context. Sudadi, Rahmadi, Ramli, Kasuma, Nirvin-Vargas and Angulo-Cananillas (2021) define PBL as 'an instructional approach built on authentic learning activities that engage students' interests and motivation'. PBL does not only involve direct teaching as the activities require the students to be actively involved in the learning process by solving problems that are 'carefully constructed by the lecturer according to the course syllabus assigned to them' (Othman & Shah, 2013:126). The language problems that are constructed through the activities by the lecturer require the students to search for and find information, then they must read, compare information, order, and sort the information, as well as solve the problems. They can do this as they work towards the agreed goals that are centred on the relevant themes or topics and are a combination of complex communication skills (listening and reading), as well as productive skills (speaking and writing), usually in authentic situations (Thitivesa, 2014:2994). Therefore, PBL is an approach to learning that is student-centred, and it fosters the independence of students, while encouraging collaborative learning, creativity among the students and fostering problem-solving approaches to learning (Jiang & Zhang, 2020). In other words, in academic essay writing, the students are required to work as a team and search for relevant information. They are also expected to collate the information in a coherent manner and write up the essay taking into consideration the features and conventions of academic essay writing.

Mobile Technologies (MT) are closely associated with PBL. For the purpose of this study, the terms 'MT' and 'mobile technologies' are used interchangeably. According to Zafari and Kamal (2020), mobile technologies are electronic devices that are small enough to fit in one's hand or pocket and they include but are not limited to devices

such as handheld laptops, mobile phones, Portable Digital Assistants (PDAs), iPods, to name a few. The common and easily accessible mobile devices that are used by the students in teaching and learning are smart phones (Haron & Rahmat, 2020: 672) According to Jassim (2019), the mobile phones enable the students to download relevant essay study material even when they are not in the classroom. Sung, Chang and Liu (2016) point out that some language teachers have adopted mobile devices to teach academic essay writing. Similarly, Fathy, El and Fattah (2015) claim that the students can use WhatsApp, which is one of the mobile phone features to create a story by contributing one text message at a time and passing it on to other students in the group to add a sentence or two, until the story is complete. Therefore, the MTs, specifically the mobile phones, have the potential to enable the ESL students to enhance their academic essay writing competencies in and outside the classroom (Fattah, 2015: 32; Andujah, 2016).

While various studies have focussed on using either PBL or the MT to enhance the students' academic essay writing competencies, to the researcher's knowledge very few studies have employed an integrated PBL-MT model to develop the first year ESL students' competencies in academic essay writing in South Africa, and in particular at the University of Limpopo. For this reason, this study explores how an integrated PBL-MT model can enhance the first-year students' academic essay writing competencies in an ESL context. For the purpose of this study, 'writing,' 'student writing,' 'Academic essay Writing (AW),' 'essay writing,' and 'academic essay writing,' mean writing for academic purposes and thus these concepts are used interchangeably henceforth.

1.3   Problem statement

Research shows that student writing poses challenges worldwide for English second language teaching and learning contexts, particularly in institutions of higher learning Altınmakas & Bayyurt, 2019). In some instances, students fail to distinguish between the spoken and the written styles in the English texts (Fadda (2012:127). Gu (201:1) provides a distinction between the Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP), stating that BICS refers to conventional fluency in a language while CALP refers to the student's ability to understand and express, in both oral and written modes, the concepts and ideas that are relevant to success in school. The problem is that although the essay writing skills of most ESL students in South Africa has, and continues to be a key issue, and the

challenges continue to escalate every year, it seems that the specific teaching programs that can effectively address the particular needs of the diverse ESL student cohort might not be effective particularly at the University of Limpopo.

As indicated in the background, this study focused on the first-year students because they are the ones who first encounter academic essay writing at the university. As a lecturer at the University of Limpopo, in South Africa, the researcher has for the past three years noted how yearly first-year students in particular, struggle with, and experience difficulties with writing academic essays. These difficulties were identified in one of the researcher's English and African Literature in English (HENA011) classes in the students' assignments which included short classwork writing activities, as well as essays in the assignments and examinations.

Firstly, in one classroom activity, the students were instructed to write two paragraphs on a given topic. Observations of weak and ineffective academic skills were observed among the students. The produced texts displayed several mistakes in terms of content, structure, and grammar. Secondly, in another activity, the students were instructed to add linking words to assigned activities and then expand on them. In the same manner, the produced answers displayed the students' difficulties when using and identifying the correct linking words and when expanding on the content.

Thirdly, in an assignment, the students were instructed to write an essay of approximately 350 words on a given topic and they were allocated two weeks to work on it. Again, the students' essays confirmed their difficulties with essay writing in terms of structure, content, and language. That made the researcher aware that the students have challenges with writing academic essays, even when allocated adequate time to write outside the classroom where they have access to other resources and supporting materials, such as dictionaries that they could use as references. Having observed that the students experience difficulties with writing essays individually, the researcher resorted to grouping students, thereby allowing them to work collaboratively on given ESL projects.

Fourthly, in another activity, which was a group activity, the students were instructed to discuss how they could improve their academic essay writing competencies outside the classroom while adhering to the accepted academic essay writing conventions. The researcher noticed that some groups experienced challenges in producing formal

vocabulary and in utilising objective language. The researcher then decided to be flexible and allowed the students to use mobile technologies such as laptops and smartphones to enhance their writing, as the 21st century curriculum is designed in such a way that the students can enhance their learning by using technology devices to encourage collaborative learning (Byrne, Kearney & Sullivan, 2019). The students were given an online academic essay writing activity in which they were required to find online sources to support their arguments. It was then that the researcher realised that some students did not own any mobile phones, thus they were not able to complete the activity in the classroom. One of the reasons could be that some students cannot afford to buy these devices as they come from low-income households. Thus, the students rely mostly on computers in the university laboratories to access study material. However, the computers in the laboratories are insufficient and cannot cater for all the students. Moreover, some of the students who owned other mobile technologies such as laptops, tablets and smartphones could not operate them properly and they were hesitant to ask the others to assist them.

English language students are expected to exhibit a mastery of fundamental skills including academic essay writing, to enable them to write assignments, reports, summaries, dissertations, and examinations. They also need to master the universal rules such as grammar, usage, and text organisation (Redman & Maples, 2017). Moreover, the students require adequate knowledge of the use of mobile technologies to enhance their academic essay writing competencies. Considering that currently these students are required to not only improve their academic essay writing skills but also to learn to work collaboratively, and also to use mobile technologies efficiently to enhance their writing, it is imperative to explore how the use of an integrated PBL-MT model can enhance the students' essay writing in an ESL context. To the researcher's knowledge, there is a gap in research in the use of the integrated PBL-MT model to enhance academic essay writing at the University of Limpopo (UL) in South Africa.

Research shows that various institutions of learning globally use the integrated PBL-MT model or either the PBL or MT to enhance the students' writing and learning. According to Svec and Mitchell (2021), academic essay writing using PBL can improve the students' writing skills because it emphasises on collaboration among students and learning is organised around, complex questions, the students' voices and

choices, a feedback and revision loop, and ultimately, a student- produced document or product.

In addition, the studies in South Africa show that MT offers the possibilities of enhancing the students' academic essay writing. For instance, in an investigation on the use of the Blackboard Collaborate-Based Instruction to improve academic essay writing skills of second language writers, Motlhaka (2020) found that the Blackboard Collaborate-Based Instruction provided second language writers with an online community in which they can collaborate and help one another with editing, revising, and improving their academic essays through feedback. Similarly, Motlhaka, Najjemba and Cronje (2020) posit that digitally-mediated role-plays indicate the potential for collaboration, the social exchange of information and knowledge, as well as the motivation for learning beyond the classroom. According to Khafaga (2021), blackboard collaborate is one of the emerging technologies in education that is widely utilised by many educational institutions. It offers a type of an online learning environment that helps the learners and the teachers to attend virtual classes, get involved in online discussions, download and upload assignments, receive 'in-time' feedback and sit for examinations (Gray-Rosendale & Stamner, 2020: 65)

Although the studies elsewhere have shown that a PBL-MT model offers opportunities to develop and enhance essays, in South Africa, and in particular at the University of Limpopo, no studies have examined how a PBL-MT model can enhance the students essay writing in an ESL context. A literature search of various databases also indicates that there is a gap in this research area. This area does not seem to have been investigated previously in South Africa, and certainly, no investigation of this type was conducted at the University of Limpopo. It is against this backdrop that the researcher intended to examine how an integrated PBL-MT model can enhance student essay writing in an ESL university context. The research aims and research questions are discussed below.

1.4 Research aim, and research question

1.4.1 Research aim

Focussing on first-year ESL students at the University of Limpopo, a contact university in South Africa, this study aimed:

To explore how an integrated PBL-MT model can enhance the first-year students' academic essay writing competencies in an ESL context.

The four secondary research aims are:

1. To investigate the ESL students' conceptions of their academic essay writing competencies.
2. To investigate how a PBL- MT model can enhance the academic essay writing competencies of ESL students.
3. To investigate the ESL students' conceptions of collaborative academic essay writing activities using a PBL-MT model.
4. To provide guidelines on how a PBL-MT model can enhance the ESL students' academic essay writing competencies.

1.4.2 Research question

Focussing on first-year ESL students at the University of Limpopo, a contact university in South Africa, the primary research question is:

How can an integrated PBL-MT model enhance the students' academic essay writing competencies in an ESL context?

The four secondary research questions are:

1. What are the ESL students' conceptions of their academic essay writing competencies?
2. How can a model that integrates PBL and MT enhance the ESL students' writing competencies?
3. What are the ESL students' conceptions of collaborative essay writing activities using a PBL- MT model?
4. What guidelines can inform the effective use of the PBL-MT model to enhance the ESL students' academic essay writing competencies?

1.5 Theoretical framework and literature

1.5.1 Theoretical framework

The theoretical framework that underpins this study is Online Collaborative Learning (OCL). The OCL is defined as a learning theory that builds upon the 20th century's learning theories, but presents a new perspective (Harasim, 2012:14).These theories

are the: Behaviourism Learning Theory, that focuses on how people behave, especially how to change or elicit a specific behaviour; the Cognitive Learning Theory, that recognises the importance of the mind in making sense of the material world; and the Constructivist Learning Theory, which is about the learning that emerged in reaction to behaviourism, cognitivism and constructivism. Therefore, the OCL emerged with the introduction of computer networks and the internet as well as the shifting of the socio-economic factors from the industrial knowledge age.

The OCL theory is critical in this study because it addresses the 21st century students' academic needs and opportunities and it also focuses on the learners of all ages as the participants in the 21st century's online knowledge communities (Harisim, 2012:13). The premise of this theory is that learning becomes effective when students learn online and collaboratively (Kosar, 2021:1) in a formal and informal educational setting.

Du, Wang, Zhou, Xu, Fan and Lei (2018) claim that the benefits of OCL include collaboration, particularly when students work in group assignments and that gives the students the ability to clarify and rectify misunderstandings without difficulty; and to work swiftly to get a better understanding of projects. The OCL theory allows the students to enhance learning effectively (Chang, Li, Sun, & Huang, 2015).

The OCL theory is appropriate for investigating the ESL students' essay writing because, the researchers have discovered that there are several online collaborative writing tools such as wikis, blogs, Google docs and Etherpad that can enable the students to write essays online (Brodahl, Hadjerrolt & Hansen, 2011: 73). Furthermore, Allen, Jacovina and McNamara (2016) have revealed that there are three different computer-supported systems that were developed in the 1980s to help functions for writers and they are called Automated Writing Evaluation (AWE), Automated Essay Scoring (AES) and Intelligent Tutoring Systems (ITS). Recently, the introduction of word processors also seems to be the most suitable digital software for writing (Strobl, Strobl, Ailhaud, Benetos, Devitt, Kruse, Proske, and Rapp (2019). The word processors such as the WordStar and WordPerfect provide additional assistance to writers such as formatting devices, pagination, spelling and grammar checks, thesauri and synonym finders, search and replace, tracking and commentary functions, online tools, and index generators.

In addition, the OCL model is appropriate for investigating the students' conceptions of their academic essay writing competencies because is a 21st century learning theory (Harasim, 2012:14). In addition, it recognises the use of technology and internet in teaching and learning. Moreover, the OCL theory confirms Haron and Rahmat's (2020) claim that the students can learn at any-time and anywhere to construct essay writing knowledge (Wilson, 2002:33).

The OCL theory is appropriate for investigating how a model that integrates PBL and MT can enhance the students' writing competencies because it fosters collaborative learning among the students.

According to Dube (2020), the worldwide outbreak of the Coronavirus disease of 2019 (COVID-19) disrupted traditional teaching and learning in universities, leaving them with no option than to do virtual learning through the internet. Most universities adopted and deployed various teaching and learning infrastructure and platforms such as the blackboard, zoom, Google classroom, WhatsApp groups, and telegram groups.

Contrastingly, not all the students and lecturers have access to the internet that could enable them to participate effectively in the virtual community engagement as a result of their location and socio-economic backgrounds (Dube, 2020; Omodan, 2020).

In summary, the OCL is relevant to this study because it addresses some of the aims of this study. Besides, Dhawan (2020) analysed the strength of the online and teaching system and concluded that it is the best strategy to rescue the students from hard times during the physical contact sessions. Lastly, although the OCL theory is seen to be the learning theory that underpins this study, the other theories should not be overlooked. The literature review is discussed hereunder.

1.5.2 Literature review

This section aims to illustrate that over and above the many strategies and frameworks that are used to deliver academic essay writing in higher education institutions, PBL and mobile technologies are also the defining currents in academic essay writing. The literature on academic essay writing, PBL and mobile technologies is reviewed hereunder.

1.5.2.1 Academic essay writing in the higher education context

The students who are entering the higher education space are expected to develop into proficient academic writers. Before narrating about the benefits of academic essay writing in higher education contexts, it is important to provide the definitions of the concept within the current study.

McNamara, Morton, Storch and Thompson (2018) define academic essay writing as the process surrounding the production of text, that includes patterns of interaction with text and people, both of which are important sources in the process of learning how to write in discipline-specific ways. The drawback of this literature is that it defined academic essay writing in general terms, for instance, it stated the 'patterns' and 'discipline-specific ways' and did not specify them. This study specifies the 'patterns' and the 'discipline-specific ways' as the precision of language, formal tone, formal style, formal register, short sentences, objectivity, and the use of linking words. It also concurs with Ivrin's (2017) claim that AW depends on how well the students understand and think about the topic and how they approach the writing task. This assertion is also supported by Bennet's (2018) claim that academic essay writing and thinking are inseparable.

In this study, the definition of academic essay writing refers to any form of writing that is done to fulfil a requirement of a university. This includes the writing of assignments, reports, essay research papers, academic journals, dissertations, theses, abstracts, books as well as translation using academic conventions. The language is clear and precise, and the choice of words is formal and relevant for academic purposes. Academic essay writing according to this study, considers the formal tone and the formal style, objectivity, and the use of linking words. Moreover, the definition of academic essay writing takes into consideration the integration of mobile technologies to enhance writing. Research has revealed that the mobile technologies have proven to be effective and successful media for teaching and learning purposes (Saidouni & Bahloul, 2016:126). Some of the benefits of AW are reviewed below.

In the study on the 'Perceptions of Three Multilingual Students on their Academic essay writing in first year level,' Morton, Storch and Thompson (2018) found that the students viewed academic essay writing as beneficial. They described it as the 'literate practices' that weave together writing, reading, talk, observation, and action (Prior &

Bilbro, 2012:120), and that these practices took place in spaces inside as well as outside the academy. The shortcoming in this literature is that it did not state how the 'literate practices' are woven together and why they should weave together. Furthermore, the study did not state clearly how the literate practices can be taken outside the academy. Moreover, the literature did not state the means that enable the students to extend academic essay writing outside the academy. This is still a problem. In this technology era (Hlagala, 2015), the researcher believes that the students can 'weave together' writing, reading, observation and action successfully when they work collaboratively and when they use mobile technologies to enhance their academic essays inside and outside the classrooms.

Academic writing was acknowledged by most researchers as one of the principles by which the universities use to produce proficient academic writers (French, 2018). The students are expected to be the core of the writing process and they are not 'detached onlookers' (Taylor, 2021). Most importantly, by taking the less travelled road of integrating PBL and mobile technologies, this study sought to bring fresh insights into the teaching and learning of academic essay writing. These insights will also further contribute to clearing the murky waters on the best way to enhance the students' experiences of academic essay writing as there is currently no consensus on how the students best learn academic essay writing. The next section is a review of PBL.

1.5.2.2   Project-based learning
Before providing the benefits of PBL as a teaching and learning approach, it is critical to provide various definitions by some authors and then provide a definition within the current study. Savery (2015) defines PBL as an instructional (and curricular) student-centred approach that empowers the students to conduct research, integrate theory and practice as well as apply knowledge and skills to develop a viable solution to a defined problem. PBL is an approach that involves no teaching; the students learn by solving the problems that are 'carefully constructed by the teacher according to the course syllabus assigned to them throughout the semester' (Othman & Shah, 2013:126). Similarly, Kembangan (2019) defines PBL as a learner-centred approach that integrates all the language skills as the students work on addressing a particular question, issue, or problem.

In this study, PBL is an approach to learning that is student-centred, and it allows the students to work collaboratively in solving the problems relating to academic essay writing. The students acquire knowledge and skills on their own through exploring challenges as well as problems and they tend to solve them collaboratively. In addition, PBL in the context of this study is an approach that captures learning through the use of mobile technologies. This definition is consistent with one of the premises of the theoretical framework that underpins this study, which is the OCL that was founded by Harasim (2012) that suggests that integrating technology in teaching and learning can enhance student writing.

Similar to any approach to teaching and learning, there are PBL benefits. Bas and Reyhen (2010) investigated the effects of PBL and the traditional foreign language teaching environment on the students' achievement and their attitude towards English lessons. The investigation was carried out in two consecutive years, 2009-2010 in Karatli Sehit Sahin Yilmaz Elementary school, Nigde Turkey. The participants were 50 students, and they were divided into two groups: the experiment group and the control group. The findings indicated that the students who were educated using the multiple intelligence approach supported by the PBL approach were more successful than the other group of students. Furthermore, based on the findings obtained from this study, Bas and Reyhen (2010) highlighted the benefits of PBL by stating that, there is a significant difference between the achievement levels of the students who have been educated by the multiple intelligence supported by PBL and those who have been educated by the traditional teaching methods. The shortcoming of this study is that it did not investigate the two groups of students using an integrated PBL and MT to find out if it will not yield the same results. This study sought to explore how an integrated PBL-MT model can enhance the first-year students' academic essay writing competencies in an ESL context.

Most importantly, this study adopted the PBL because it is a learning approach that is, student self-centred, self-directed and it also fosters collaboration and problem - solving skills among the students (Savery, 2006; Stauffacher, Walter, Lang, Wiek, and Scholz, 2006); Brundiers et al, 2010; Brundiers & Wiek, 2011), which can assist in improving student writing. Besides, the PBL approach engages the students in inquiry-based research for complex problems. The students work collaboratively to solve complex problems. For the purpose of this study, the 'Project-Based Learning-Mobile

Technology model,' the 'PBL-Mobile Technology model,' and the 'PBL-MT model,' are used interchangeably henceforth. The next section is a review of MT.

1.5.2.3 Mobile technology

Before providing the benefits of MT, it is important to provide the definitions as coined by other studies and to provide a definition of MT in the context of this study.

Sung, Chang and Liu (2015) define MT as individual small computers that contain exceptional computing power, such as laptops, Personal Digital Assistants (PDAs), tablets, Personal Computers (PCs), cell phones, and e-book readers. These devices combined with wireless communication and context sensitivity tools, make one-to-one computing a learning tool of 'great potential' in both the traditional classroom and in outdoor informal learning (Sung, Chang & Liu, 2015:252).

In the same vein of argument, Bahloul (2018: 245) posits that the increasing use of mobile devices for the learning education field has given origin to Mobile Assisted Language Learning (MALL). Begum (2011) describes MALL as an approach to language learning that is enhanced through the use of mobile devices such as mobile phones, MP3/MP4 players, PDAs, and palmtop computers. The MALL approach can be implemented in numerous forms including face-to-face, distant, or online modes (Taylor, Grant, Hamdy, Grant, Marei, & Venkatramana, 2020: 14)

In this study, the mobile technologies refer to portable devices such as smart phones, laptops, tablets, palm hand computers, and netbooks that connect to the internet and are used for communication and other related aspects. In the education contexts, in the 21st era, the mobile technologies serve as tools for teaching and learning.

The major benefits that are attributed to mobile technologies are their accessibility as they can be used 'anytime' and 'anywhere' (Derakhshan & Khodabakhshzadeh, 2011:1152). The researcher argues that when students use mobile devices such as smart-phones in the classrooms, they must be monitored because some students are likely to use them inappropriately. For instance, the students may watch pornography while the lectures are on.

Other benefits include their 'flexibility, low cost, and that they come in a small size, and are user-friendly' (Agrawal & Parvez, 2018: 262). The use of MT in education provides the educators with the opportunity to reimagine teaching and learning. This creates a

more flexible learning model that gives the students the access to information and a shift of authority based on the learning structure to a structure that is based upon the concept of the community of learners (Ham, Saltsman, Junes, Baldridge & Perkins, 2013).

Despite their myriad benefits, the mobile technologies have some weaknesses. Jonson, Nkanu and Al Udo (2021) claim that using mobile technologies with internet connection can cause serious distractions among the learners. In some cases, when they are not supervised, the learners tend to deviate from their learning tasks to browse sites that are not connected to their learning tasks such as chatting with their friends and seeing videos on social media platforms.

This study adopts MT because its primary aim is to explore how an integrated PBL-MT model can enhance the first-year students' academic essay writing competencies in an ESL context. Besides, MT offers many benefits such as that they come in small sizes, are low cost in terms of data and flexibility, and they are also relevant in the 21st century's teaching and learning space. Mobile technologies have proven to be efficient to enhance teaching and learning in this century.

In summary, the detailed discussion of academic essay writing, MT and PBL will be discussed in Chapter 2 of this study. The research design and methodology are discussed below.

1.6   Research design and methodology

This section discusses the research paradigm, research design and the methodology for this study. In addition, it discusses the population, the sample and the sampling method that was used in this study.

1.6.1 Research paradigm

Paradigms are patterns of beliefs and practices that 'regulate inquiry within a discipline by providing lenses, frames and processes through which an investigation is accomplished' (Majeed, 2019). This study employed the interpretive paradigm.

1.6.1.1   Interpretive paradigm

The interpretive paradigm is a philosophical underpinning for qualitative studies (Thanh & Thanh, 2015). Qualitative research uses a wide-and deep-angle lens, examining human choice and behaviour as it occurs naturally in all of its detail (Sherif,

2018). The interpretive worldview is appropriate for this study because it is committed to one system of philosophy and reality and it bases the inquiry on the assumption that reality is socially constructed (Scotland, 2012:10). Moreover, this study employed qualitative research design to collect and analyse data. A case study is discussed below.

1.6.2 Case study

This study was conducted at the University of Limpopo in South Africa. In a case study, also known as *idiographic research,* an individual, an event, or a program is studied in-depth for a described time (Leedy & Ormorod, 2015:271). The case study approach was appropriate for this study because it allowed the researcher to gather 'in-depth' information about the problem because the data that is collected in case studies is richer and is of great depths than that which can be found through other designs (McMillan & Schumacher, 2010). Moreover, the benefit of a case study is that it makes use of multiple sources of data. The multiple sources of data provide the researcher with rich and enough information, as Carstens (2016:32) articulates that when multiple sources and techniques of data collection are employed in a study, the researcher gains a bigger picture of the phenomenon being studied and this makes the study credible.

In addition, a case study approach was appropriate for this study because the researcher studied a case of the first-year ESL students that were registered at the University of Limpopo for a period of three weeks, to get a better understanding of, firstly, the conceptions of their academic essay writing competencies. Secondly, the researcher intended to find out how a PBL and MT model can enhance their academic essay writing competencies. Thirdly, she wanted to get a better understanding of the first-year ESL students' conceptions of collaborative academic essay writing activities using a PBL and MT model. Lastly, the intention was to provide guidelines on how a PBL, and MT model can enhance the ESL students' academic essay writing competencies. Overall, the case studies are useful approaches for data collection, especially because of their uniqueness. The next section is a discussion of a research design.

1.6.3 Qualitative research design

The study adopted a qualitative approach in a case study research design to collect data. Qualitative research uses a wide- and deep- angle lens, examining human choice and behaviour as it occurs naturally in all of its detail (Sherif, 2018). Qualitative research is appropriate for this study because it holds various benefits. Firstly, qualitative data lends itself to understanding the people's experiences, attitudes, and underlying values. As such, the data that is collected will allow the researcher to study a particular context and to understand the behaviour of the participants. Secondly, qualitative research is often open-ended and thus allows the participants to raise issues of which the researcher is not aware (Carsten, 2016). Population and sampling are discussed below.

1.6.4 Population and sampling

1.6.4.1 Population

Barbie and Mouton (2001) maintain that the population of a study is a group of people about whom we want to draw conclusions. The population in this study was the students enrolled for a first-year English module in the Department of English Studies in the year 2020. The population consisted of 687 students. The university was chosen for its advantage of being the nearest university in the area where the researcher lives. In addition, the students enrolling at the University of Limpopo register for English as their second language. Sampling is discussed hereunder.

1.6.4.2 Sampling

Leedy and Ormrod (2015) define sampling as the process of selecting the sources such as the people, object, textual material, electronic records, or audio-visual material from the population where the characteristics of a subset are selected from a large group. The selected entities are therefore called samples (Johnson & Christenson, 2002:197). The sample for this study consisted of first-year ESL students.

This study applied purposeful sampling to select the first-year ESL students. In purposeful sampling, people or other units are chosen for a particular purpose (Leedy & Ormorod, 2015:183). As this study aimed to integrate PBL and mobile technologies to enhance the students' essay writing in an ESL context, a sample of 15 first-year ESL students, that were males and females enrolled for the English module was selected. A purposive sampling approach was appropriate for this study because the

researcher solicited the students with specific characteristics to yield the most information (Leedy & Ormorod, 2015:183). The sample was selected because almost all of the students were registered for English as their second language and their English competencies were similar. The next section discusses data collection.

1.6.5 Data collection

The collection of data is a systematic process in which the researcher collects relevant information to achieve their purpose and objectives (Burns & Grove, 2005). This study collected data by using focus group interviews, observations, and documents. The three instruments that were used to answer the research questions are discussed below.

1.6.5.1 Focus group interviews

The first instrument that was used to collect data was focus group interviews. Focus group interviews are valuable instruments for collecting qualitative data (Dilshad & Latif, 2013:1). The researcher led a discussion with a small group of students to examine in detail how the group members think and feel about the topic (Johnson & Christensen, 2012: 204). Interview protocol was used to elicit data before and after the training of the PBL and MT model.

1.6.5.2 Observations

The second instrument that was used to collect data was observations. Bushiso (2017) posits that an observation is an important technique of data collection because it gives direct information, since people do not always do what they say they do. In this study, through classroom observations the researcher found first-hand information about academic essay writing without using a model or before the training and first- hand information using a PBL and MT model. An observation protocol schedule was used to elicit data.

1.6.5.3 Documents

The third tool that was used to collect data was documents. The documents in research may include, inter alia: policies, acts, and written essays. In addition, the material may also be public records, textbooks, letters, films, tape diaries, themes, and reports (Neuman, 2006:323). In this study, the documents were the students' academic essays, both individual and group essays. The academic essays provided confirmation and the evidence of the views expressed by the students in focus group

interviews. The essays were collected before and after the training of the model and were marked using an essay rubric. Data analysis is discussed below

1.6.6 Data analysis

In this study, the qualitative data that was gathered through the focus group interviews, observations, and the documents was analysed thematically. The thematic content analysis is a data analysis method that helps a researcher to identify the themes and the patterns of meanings across the data (Braun & Clarke, 2006). The thematic content analysis was critical in this study because it is a more flexible way of managing data.

In summary, the detailed discussion of the research design and the methodology will be provided in Chapter 3 of this study. The next section discusses the significance of the study.

1.7   Significance of the study

Having taught English to high school teenagers and adult students at a university, the researcher noticed how academic essay writing activities tend to impact negatively on the ESL students' performance and success. Research also revealed that the students' proficiency in academic essay writing has a positive influence on their academic performance. The outcomes of this study may provide the ESL practitioners, and other stakeholders with some guidelines on academic essay writing using PBL and MT. Furthermore, the curriculum designers may be enlightened on academic essay writing, on PBL and on the use of mobile technologies in enhancing student writing, and this may urge them to design advance study materials that fit well with PBL and MT, especially in this 21st century era. Most importantly, the outcomes of this study would contribute to the theory, practice, and the future of the researchers on the same topic, and it will be of great value to future researchers as they will be published in academic journals. It will also benefit the UNISA Institutional Repository and will be presented at academic conferences. Moreover, this research will provide a valuable input for universities, specifically the English Second Language lecturers. Lastly, the study may also guide the Department of Higher Education and policy makers within the education sector, to look for better ways of improving the education system. The next section discusses the definitions of key terms.

1.8   Definitions of key terms

The scholars from different disciplines define terms differently. Therefore, an operational definition to guide this study is essential. Perez-Chada, et al. (2021) posit that terminology should not be viewed as restrictive or unchangeable and that the definitions must be given as they are used in relation to the researcher's project. The key terms that are used in this study are defined below.

Integration: The Oxford Advanced Learner's Dictionary (2010) defines 'integration' as the act or process of combining two or more things so that they can work together. The operational definition of the term 'integration' for the purpose of this study is to combine PBL and MT to enhance the students' essay writing.

PBL: Thomas (2000) defines PBL as a model that organised learning around projects. Similarly, Sudadi et al. (2021) define PBL as an instructional approach that is built upon authentic learning activities that engage the students' interests and motivation. It is an interdisciplinary, student-centred activity with a clearly defined project outcome. For the purpose of this study, PBL is a collaborative learning approach that is student-centred and places the students in a realistic contextualised problem-solving environment.

MT: According to Lee, Wang, Chao, Tsai, Hsin, Kang, Fu, Chao, Huang, Li, and Chuang (2018), MT is often described as the handheld platforms that incorporate hardware, software, and communication. MT increases the students' level of social presence, and it facilitates their acquisition of complex cognitive skills (Jiang & Zhang, 2020). Mobile technologies for the purpose of this study are devices that are constantly used for social purpose and for learning. The mobile phones, especially the smart phones are viewed as significant tools to enhance learning.

Academic essay writing: Experts from different English disciplines define academic essay writing differently. Therefore, an operational definition to guide this study is based on Hyland's (2013) definition that, academic essay writing is an important constituent of the knowledge, disciplines, and professionalism of academia. In addition, this study regards 'academic essay writing', 'writing', 'student writing', 'essay writing' as referring to writing for academic purposes. These concepts are used interchangeably.

English second language: Lacosse, Canning, Bowman, Murphy, and Logel (2020) refers to English second language students as those who do not speak English as a first language. In addition, ESL refers to the heterogeneity of students as a group who vary in their English proficiency, as well as other background characteristics such as ethnicity, socio-economic status, and the high school academic performance, among others. In this study, ESL refers to the use of English by students with different native languages.

Online collaborative learning: According to Redmond and Lock (2006), the online collaborative learning framework is grounded on the social constructivist approach to learning in technology that emphasises that a student is an active rather than a passive participant in learning. In addition, More and Kearsley (2012) define collaborative learning as the learning that occurs in "a learning environment in which individual learners support and add to an emerging pool of knowledge of a group, emphasises peer relationships as learners work together creating a learning environment". The operational definition of online collaborative learning for the purpose of this study is the learning in a group, in particular, the writing of academic essays in groups.

Mobile learning: Quinn (2000) defines mobile learning as the learning that takes place with the help of mobile devices. In line with this definition, Polsani (2003) defines mobile learning as a form of education whose site of production, circulation and consumption is the network. The working definition of mobile learning for the purpose of this study is the learning using personal mobile devices. In particular, learning to write academic essays using mobile devices.

Collaborative writing: According to Stortch (2013), collaborative writing involves the co-authoring of a group of learners in a written text. The operational definition of collaborative writing for the purpose of this study is when the ESL students produce essays in which all the students contribute to all the aspects of writing such as content, structure, and language.

Mobile or cell phone: According to Hossain (2019), a mobile or cell phone is an integral part of our daily life as well as part of the university life and culture. Modern cell phones enable the users to access a variety of electronic media at almost any time and from any place. The working definition of a mobile or cell phone for the purpose of this study

is any portable telephone that uses a cellular network or the internet and is capable of contributing to student learning.

Internet: Experts from different disciplines provide different meanings for the word 'internet'. Topacio (2018) defines an internet as the online platform that has been widely used in the language learning and teaching space. The working definition of internet for the purpose of this study is the networks that connect computers and enable students to access information and they can communicate from anywhere and at any time. The next section outlines the thesis chapters.

1.9   Thesis chapters

This thesis consists of the following chapters.

Chapter 1: This chapter discusses the background to the study and the research problem. It also presents the research aims and research questions. It has a summary of the theoretical framework, the literature review, and the research methodology. Finally, the significance of the study as well as an overview of the thesis structure are discussed.

Chapter 2: The theoretical framework for this study as well as the literature review on academic essay writing, PBL and MT are discussed herein. The chapter begins by outlining the definitions of academic essay writing, PBL and MT. Secondly, the models relevant to academic essay writing, PBL and MT are discussed followed by the benefits and weaknesses of academic essay writing, PBL and MT.

 Chapter 3: The methodology chapter discusses the research design and the research methods that were used in the study. The chapter also presents the sampling techniques as well as the data collection procedure that was used in this study. Furthermore, the chapter presents the training of the PBL-MT model. Lastly, the chapter discusses the trustworthiness of this study.

Chapter 4: The chapter is a continuation of the methodology chapter. It discusses the training of the PBL-MT model. It also discusses the training in stages and provides a summary of the training.

Chapter 5: This chapter presents the findings of the study. The summary of the findings is also included in this chapter.

Chapter 6: This chapter provides an analysis and a synthesis of the findings in line with the research questions. The chapter further presents the findings, the conclusions as well as the recommendations for further studies.

This chapter presented the background of this research study, and it outlined the research problem and the research questions. It also provided a summary of the theoretical framework, the literature review as well as the methodology. The significance of the study, the definition of key terms and the thesis chapters were also outlined. The next chapter discusses the theoretical framework and the literature review.

CHAPTER 2:   LITERATURE REVIEW

2.1   Introduction

The previous chapter discussed the background of the study. This chapter presents the theoretical framework that underpins this study, as well as a discussion of the relevant studies in the field of academic essay writing, PBL and MT. In addition, the underlying themes that are relevant to this study and the relevant models of delivery of academic essay writing, PBL and MT, that are particular in ESL contexts are discussed. The theoretical framework is discussed below.

2.2   Theoretical framework

Imenda (2014:189) defines a theoretical framework as a 'theory that a researcher chooses to guide him or her in his or her research. Thus, a theoretical framework is an application of a theory, or a set of concepts drawn from one and the same theory, to offer explanation of an event or shed some light on a particular phenomenon or research problem'.

A theory also informs the researcher's analysis of the findings and guides the researcher's interpretation of the findings during their research (Marx, 2015:22).

To explore how an integrated PBL and MT model can enhance the first-year students' writing competencies in an ESL context, a search was made for a theoretical framework that would be suitable for the research objectives of this study. The Online Collaborative Learning (OCL) theory was found suitable for this study because it aligns to the teaching and learning contexts of the 21st century. The philosophy behind this theory is on the notion of collaborative learning and knowledge-building (Harasim, 2017:15) through computers and the internet, also known as Web 2.0. This principle aligns to the current trends of teaching and learning in which mobile technologies and collaborative learning among students are encouraged and employed by some teachers to enhance teaching and learning. Moreover, the OCL theory serves as a guide on how to integrate PBL and MT to enhance student writing in ESL contexts. The themes underlying the theoretical framework for this study are the definitions of the OCL theory; the benefits of the OCL theory; the weaknesses of the OCL theory as well as relevance of the OCL theory to this study. The definitions are grouped

according to the commonalities and differences for simplicity and for the flow of information.

2.2.1 Definitions of the online collaborative learning theory

The definitions of the OCL theory prior to 2000 focused on integrating technology into the education system to support the development of collaborative learning and the high order thinking among students. For instance, Delisle (1997) maintained that the students educated for the world of the 21st century 'must develop habits of thinking, research, problem-solving to succeed in a rapidly changing world' (Delisle,1997:4). The assertion is supported by Harris's (2000:58) claim that flexible frameworks are required to structure understanding on the focused learning activities that help students to make powerful, and worthwhile use of online tools as well as resources. Thus, the students educated in the 21st era are expected to develop thinking and problem-solving skills that are aided by online tools to enhance their learning. The research shows that some students at institutions of higher learning own powerful online tools such as smartphones, tablets and other mobile technologies and have access to other online resources to enhance their learning (Kamaghe, 2020:141).

Subsequent to the year 2000, the researchers focused their attention to the learning environment by investigating the effectiveness of collaborative learning in both blended and the fully online learning environment, locally and internationally. For instance, Reid (2001) explained the OCL theory in the form of writing that is classified under Computer-Supported Collaborative Learning (CSCL). Furthermore, the author defined it as a pedagogical approach that is enhanced and supported by computer-shared applications and that are prompted and facilitated by the synchronous and asynchronous Computer Mediated Communication (CMC); to enable students in local and international writing classes to work collaboratively to exchange ideas, resources, and feedback. This definition is relevant in this 21st era as it incorporates the use of computers and the internet in teaching and learning, particularly in writing classes. Moreover, the OCL model is not limited by distance as it caters for both students in both local and international writing classes.

According to Bernett (2004:4), 'in the past collaborative learning activities were restricted to full-time students in on-campus settings because of the logistics challenges in finding time and space for students to work together'. However, the

advent of the internet has changed such settings and that lead to the introduction of Distance Education (DE) and lately to Open Distance Learning (ODL). For instance, Thorpe (2002:105) maintains that the ODL model is characterised by a more diverse range of practices and experiences for learner support and that all aspects of the ODL theory should facilitate learning together with the learner's well-being. This assertion is supported by Shandu-Phetla's (2017) claim that the model came into being as a shift from DE to ODL, which was embraced by ITU UNISA (2008a). ITU UNISA defined it as a learning model that endeavours to bridge time, geographical, social, economic, education and communication distance between learning institutions and the students, the students and the academics, the learning materials, and the students and among the students themselves (Shandu-Phetla, 2017:39).

Recently, from 2010 upwards, the researchers began to consider OCL as the theory that takes into consideration the learning environment that caters for learners of all ages. For instance, Harasim (2012) defined the OCL theory as 'contemporary educational practices based on both the blended and the fully online environment with learners of all ages and in all settings (Harasim, 2012:3). Thus, the OCL theory focuses on recent approaches to teaching and learning and caters for learners of all ages, irrespective of gender. The drawback of this definition is that it focuses on the practices based on blended and fully online environments. This study specifies the learning environments as those that integrate PBL and MT to enhance student writing in ESL contexts.

Furthermore, most recently researchers appear to agree that the OCL theory is grounded upon the learning theories of the 20th century. These theories are the Behaviourism Learning Theory that focuses on how people behave, especially how to change or elicit a specific behaviour; the Cognitive Learning Theory, that considers the significance of the mind in making sense of the material world; and the Constructivist Learning Theory, a theory about learning that emerged in reaction to behaviourism, cognitivism, and constructivism. These theories are built upon one another to enhance and advance knowledge. In other words, without these three theories of the 20th century, the Behaviourism Theory, the Cognitive Learning Theory, and the Constructivist Learning Theory, the OCL theory would not have existed. In addition, being a theory that emanates from the 20th century theories and with the 'invention of computer networking and the internet and the accompanying socio-

economic shift from the industrial knowledge age' (Harasim, 2012: 15), the OCL theory is considered relevant to this study as it focuses on the use of computers and the internet to enhance student writing.

Despite being the theory that considers the use of computers and the internet for teaching and learning, the OCL theory recognises the collaborative learning of students (Kosar, 2021: 1). This assertion is supported by Rogers' (2013) claim that collaboration is "an act that students work jointly, particularly with collective intellectual endeavours''. The researcher concurs with the above- mentioned authors because collaborative learning is associated with the teaching and learning of the 21st century. The students are encouraged to work collectively and connect with their fellow students locally and internationally using online devices and the internet to enhance their learning. Moreover, collaborative learning is more than group work; it is co-labouring and the co-construction of knowledge facilitated by faculty-developed intentional learning activities (Barkley, Major & Cross, 2014). In addition, collaborative learning allows the learners to 'mutually search for understanding, solutions or meanings, or create a product' (Chang and Lee, 2019). However, from the researcher's point of view, it would be difficult for the students to mutually search for understanding and solutions if they do not integrate MT in their writing.

In this research, the OCL theory is defined as a model that caters for students of the 21st century, who learn collectively using MT devices that connect to the internet to enhance writing. Furthermore, the definition provided by Chang and Lee (2019) previously aligns to the context of this study. Firstly, in applying the OCL theory in teaching and learning, the students can work collaboratively to search for information, understanding, solutions to the problem; and they can create academic essay writing products together. In other words, the students can work collaboratively in trying to understand student writing processes and ultimately produce error-free essays. Secondly, the principle behind OCL is that the students can collaborate with one another in local and international writing classes to achieve a common goal. The ESL students can collaborate with one another in local and international learning environments to share knowledge and understanding of student writing. Lastly, the OCL theory is relevant for the integration of PBL and MT to enhance student writing.

In light of what has been discussed above, the OCL theory is critical in that it fits in this study that explores the integration of PBL and MT to enhance student writing in ESL contexts. The philosophy behind PBL is primarily based on the collaborative engagement of students while MT focuses on the use of mobile devices and the internet to enable the students to enhance AW, locally and internationally. The benefits of the OCL theory are discussed below.

2.2.2 Benefits of the online collaborative learning theory

Various researchers have highlighted the benefits of the OCL theory in different teaching and learning contexts. For instance, in the study of the use of social media for collaborative learning to enhance the learner's performance, Al-Rahmi and Zeki (2017:526) found that the students were satisfied with collaborative learning through use of social media and that also contributed positively to their performance. Social media is described as the channel through which knowledge is transmitted between students and communities. Moreover, MT is considered as one of the social media channels that can be used to enhance student writing.

According to Novak, Rozzouk and Johnson (2012: 39), mobile tools play a positive role for enhancing the performance of students and for encouraging collaborative learning. The assertion is supported by Chai and Fan's (2016:1425) findings that the classes where the Mobile Inverted Constructivism (MIC) model is applied, the students are better motivated to learn and are creative when compared to traditional classroom teaching.

Furthermore, the research shows that the OCL theory addresses the 21st century students' academic needs and opportunities and it focuses on the 'leaners of all ages as participants in the 21st century's online knowledge communities' (Harasim, 2012: 13). The assertion is supported by Du, Wang, Zhou, Xu, Fan and Lei's (2018:273) findings that the OCL theory articulates collaboration, particularly when the students work in group assignments and that also provides the students 'the opportunity to ascertain and rectify the misunderstandings without difficulty. It does so swiftly to get a better understanding of being caught and it improves the learning effectiveness and student satisfaction' (Chang, Li, Sun, & Huang, 2015:803). This applies to both local and international educational settings.

The application of interactivity in online environments is supported to benefit the students' persistence (Coroxton, 2014), engagement and performance in online learning (Blasco-Arcas, Buil, Hermandez-Ortega, & Sese, 2013; Park 2013). Moreover, the students can use online platforms to connect with other students locally and internationally; and also follow lectures online. They can start online discussions through various collaborative tools; submit assignments and even search for their academic progress online (Muuro, Wagacha, Oboko & Kihoro, 2014:132). Other potential benefits of collaborative learning include the development of critical thinking skills, the development of knowledge and meaning, reflection and transformative learning (Muuro et al., 2014:132). The OCL theory like any other theory has weaknesses and these are discussed below.

2.2.3 *Weaknesses of the online collaborative learning theory*

Despite the benefits of the OCL theory, there are shortcomings that were identified by other researchers. For instance, Robert and McInnery (2007) identify seven common problems in an online learning environment such as student antipathy towards group work; the students selecting groups; the lack of essential group-work skills; the free riders who are individuals who decide not to participate in corporative learning group activities and often lower the morale, productivity and effectiveness of the group; the possible inequalities of students' abilities; the withdrawal of group members and the assessment of individuals within the groups. Some of the challenges faced by the students in online collaborative learning include but are not limited to, the difficulty of communication with peers, the lack of sense of community and the absence of real time feedback (Robert et al., 2007). This assertion is supported by Roberts's (2004:14) findings of online learning environments, whereby some team members found some difficulties in initiating and maintaining communication. Other weaknesses of OCL include poor motivation whereby the lecturers and the tutors post irrelevant posts to learning scenarios, the students misunderstanding the topic, and the posts containing grammatical errors (Muuro, et al., 2014). Thus, the students tend to be demotivated and deviate from using online learning. Though some researchers had identified some weaknesses of the OCL, the theory is relevant to this study.

2.2.4 Relevance of the online collaborative learning theory to this study

The OCL theory is relevant to this study because it aligns to some of the objectives outlined in Chapter 1 of this study. Firstly, the OCL theory is relevant for investigating the ESL students' conceptions of their essay writing competencies because, the researchers have discovered that the theory focuses on the collaboration of the students using online collaborative writing tools such as the wikis, blogs, Google docs and Etherpad, that can enable the students to write essays online (Brodahl, Hadjerrolt, & Hansen, 2011:73). The assertion is supported by Allen, Jacovina, and McNamara's (2016) claim that there are three different computer-based systems that were developed in the 1980s that help with the functions for writers. These include the Automated Writing Evaluation (AWE), the Automated Essay Scoring (AES) and the Intelligent Tutoring Systems (ITS). Recently, the introduction of word processors is seen to be the most suitable digital software for writing (Strobl, et al., 2019:33). The word processors such as the WordStar and WordPerfect provide additional assistance to writers such as formatting devices, pagination, spelling and grammar checks, thesauri and synonym finders, search and replace tracking and commentary functions, online tools, as well as index generators. Moreover, the OCL theory recognises the use of technology and the internet in teaching and learning and that confirms Haron and Rahmat's (2020, 672) contention that the students with online tools and the internet, can learn at any time, and from anywhere to construct knowledge (Wilson, 2002:33).

Secondly, the OCL theory is appropriate for this study because it fosters collaborative learning among the students. The premise behind the OCL theory is on the notion that the students succeed when they use online technologies to interact with their peers, locally and internationally to exchange information about student writing. The researcher contends that collaborative learning and the sharing of information through applications such as Facebooks, wikis, podcasts, and blogs can enable the ESL students to connect with their peers, locally and internationally. The students can share information on academic essay writing using the online tools connected to the internet.

Thirdly, the OCL theory is appropriate for investigating the ESL students' conceptions of collaborative academic essay writing activities using MT in student writing because it focuses on the learners of all ages, who learn through technology (Harasim, 2012:

11). In an OCL context, the students use the MT tools that are connected to the internet to clarify and even to evaluate one another's essays. Moreover, the mobile technologies seem to minimise the problems related to the geographical distance. Lastly, the OCL theory is relevant to this study since it aligns to the 21st century's teaching and learning programmes.

2.2.5 Summary

In summary, the OCL theory is relevant to this study because it aligns to the primary aim of the study, that is to explore how an integrated PBL-MT model can enhance the first-year ESL students' academic essay writing competencies.

The literature review is discussed below.

2.3   Literature review

The reviewing of previous studies is critical as it helps to identify the status quo in the literature and it guides the development of possible solutions (Shandu-Phetla, 2017:17). Much research was done and is still underway on student writing also known as academic essay writing, writing and essay writing (Chokwe, 2011:11); PBL and MT. However, the limited themes explain an integration of project-based learning and MT to enhance the first- year students' writing competencies in ESL contexts. The literature review section in this study seeks to illuminate the benefits and challenges of AW at institutions of higher learning and the role of PBL and MT in enhancing student writing in ESL contexts. Furthermore, this literature review considers some of the models that are relevant to AW, PBL and MT in ESL contexts, as well as their relevance to this study. Lastly, the researcher's views on some studies of AW, PBL and MT are highlighted. The review begins with an overview of AW in a higher education context before providing the definitions thereof.

2.3.1 Academic essay writing in a higher education context

Academic essay writing in the tertiary level disciplines often poses challenges for students, locally and internationally Oikarinen-Jabai (2018). Students who are native speakers of English are often reported to have difficulties with academic essay writing (Altinmakas & Byyurt, 2019: 89). Academic essay writing is a challenge especially for the English second language students because they possess limited language proficiency for critical thinking, genre knowledge and social knowledge (Paltridge, 2002).

In a study on international graduate students' academic essay writing practices in Malaysia, Sign (2019) found that the notion of academic essay writing practices that the students bring from their poor academic backgrounds, differs from the similar notion of their current universities. Their writings, affected by previous learning patterns, do not help them to grasp the new different academic expectations in the graduate programmes. Similarly, in a study that examines the needs, means and successful practices of academic essay writing in the second or foreign language, Cennetkusu (2017: 320) found that the students think that their biggest obstacle is vocabulary, that is either having less new vocabulary and expressions or having inferior field related terminology. Their professors believe that the most serious problem is about grammar and presenting ideas clearly and smoothly.

Shulze (2017) argues that at South African universities where most local and international students are ESL speakers (Department of Higher Education and Training, 2013), the poor academic writing competencies in English are well documented. One of the reasons is that the explicit instruction in academic essay writing and organised opportunities for writing are limited (Schulze, 2017). This is a problem because most students, particularly the post-graduate students write dissertations, and they tend to rely on the supervisors and the academic tutors.

According to French (2018), student writing constitutes the primary means by which students across all disciplines, present their learning and understanding in Higher Education (HE), and how they are most often assessed on their learning and understanding by the subject lecturers who mark their written work. However, academic essay writing poses challenges to some students. Raimes (1983) defines writing as the communication of ideas, clearly, fluently, and effectively and the transfer of emotions, thoughts, wishes and dreams by using symbols in an effective way in accordance with the grammatical rules. As stated in Chapter 1, the concepts of 'writing,' 'student writing,' 'essay writing' and 'academic essay writing' are 'abbreviated AW' which means writing for academic purposes. These terms are used interchangeably in this study.

In a study on AW in an Open Distance Learning (ODL) context, Chokwe and Lephalala (2012:17) revealed that the students face numerous challenges relating to AW at first year level and that the tutors and the lecturers should be equipped to teach academic

essay writing in a way that satisfies the students' specific needs. The challenge is exasperated by the fact that English, which is a second or additional language, is a medium of instruction in some universities, especially at the Historically Black Institutions (HBIs). The assertion is supported by Musa's (2016) claims that AW is one of the critical and challenging learning aspects that the ESL students in higher education are faced with, while on the other hand, the students are expected to write error-free essays, assignments, and tests (Musa, 2016:1). What contributes more to the difficulties and the challenges is that the student begins to engage in AW at university level where AW is one of the critical aspects for teaching and learning. Moreover, the conventions for AW are far much different from the ordinary essay writings applied at high school. The next section provides definitions of academic essay writing.

2.3.1.1 Definitions of academic essay writing

The definitions of AW prior to 2000 focused on the 'good writing' by individual students rather than 'good writing' by students working collaboratively and using mobile technologies to enhance writing. For instance, Lea and Strier (2000) explained AW as 'good writing,' which is assumed to be largely a matter of learning and the mastery of universal rules for example, grammar, usage, and text organisation. According to these researchers, good writing was an issue of how best to represent knowledge within a specific discipline. The 'ground rules' of AW were often not made explicit to the students.

Subsequent to 2000, the researchers shifted focus from universal rules such as grammar, usage, and text organisation (Strier, 2000: 3) to the writing that fulfils the purpose of university. For instance, Thaiss and Zawacki (2006) defined AW as any writing that fulfils the purpose of education in a college or university. In other words, the college and university students are expected to write error-free essays, which is a matter of learning and a mastery of the universal rules such as grammar, usage, and text organisation (Redman and Maples, 2017)

Most recently, from 2010 upwards, the researchers appear to agree that AW involves the students' cognitive level. Thus, understanding and thinking are significant in the process of writing. For instance, Ivrin (2014) defines AW as an argument, and it is

associated with thinking stating that the success of AW depends on how well the students understand and think about the topic and how they approach the writing task. The students' thinking, interpreting, and presenting skills are developed and sharpened when they engage in AW (Ivrin, 2014:3). The assertion correlates with Bennet's (2018) claim that AW and thinking critically are inseparable aspects. 'You think first, write your thoughts down. Even in the process of reproducing what others would have already written, you need to think to interrogate the thoughts, analyse and evaluate texts' (Bennett, 2018:124). The researcher supports the above assertions and adds that a connection exists between writing and thinking. Writing is a product of thinking. We think then write our thoughts.

Furthermore, McNamara, Morton, Storch and Thompson (2018:16) define AW as the process surrounding the production of text, that includes patterns of interaction with a text and people, both which are important sources of learning how to write in a discipline specific way. The drawback of this study is that it defined academic essay writing in general terms, for instance, it stated the 'patterns' and 'discipline-specific ways' and did not specify them. This study specifies the 'patterns' and 'discipline - specific ways' as the precision of language, the formal tone, the formal style, the formal register, the short sentences, and the use of mobile technologies to enhance writing. These elements are critical when writing for academic purposes.

In this study, the definition of AW is any form of writing which is done and is intended to fulfil the requirement of a university. This includes the writing of assignments, essay research papers, academic journals, dissertations, and theses, abstract, books and translation using academic conventions collaboratively by using mobile devices to enhance it. The language is clear and precise, and the choice of words is formal and relevant for academic purposes. AW according to this study, considers formal tone, formal style, formal register, and brief sentences. Moreover, the researcher is of the view that the teaching of AW should include an integration of PBL, and MT. Research revealed that MT has proven to be an effective and successful medium for educational purposes (Saidouni & Bahloul, 2016:126). Some of AW's benefits are reviewed in the section that follows.

2.3.1.2 Benefits of academic essay writing

In a study on the perceptions of three multilingual students on their AW in first year level, Morton, Storch and Thompson (2018) found that the students viewed AW as beneficial and described it as 'literate practices' that weave together writing, reading, talk, observation, and action. This assertion corresponds with Prior and Bilbro's (2012: 120) claim that these practices took place in spaces inside as well as outside the academy. The shortcoming of these studies is that the authors did not state how the 'literate practices' weave together and why they weave together. Furthermore, the study did not state clearly how the 'literate practices' are taken outside the academy. This is still a problem. Being a technology era, Hlagala (2015) and the researcher believe that some students own mobile devices to enhance their learning inside and outside the classrooms. This study focuses on integrating PBL and MT to enhance AW, by using mobile devices that connect to the internet. The 'literate practices' can be extended outside the classrooms. Previous research revealed that there are some benefits that are attributed to the use of MT in the language classrooms such as supporting teaching and learning (van Praag & Sanchez, 2015).

Similarly, in an investigation of writing as a relational and social practice, Johnson, Rotman, Morgan and McLeed (2017) found that academic essay writing in groups is training that supports academic writers to produce better quality writing. Furthermore, these authors found that there are other benefits that are associated with writing in groups, and these include a shared community of practice, the renewal of ideas and the affirmation of shared humanistic values, connections, and empathy with others. The researcher contends that when the ESL students write essays collaboratively, they tend to assist one another by clarifying the difficult sections of writing, and ultimately producing error-free pieces of writing.

The other benefits of academic essay writing as discussed by other authors relate to improving the students' writing skills, making them good communicators, and assisting them in writing their final project thesis. The skill may also be utilised even when the students have graduated and are applying for work (Ibrahim, Yunus & Khairi, 2018). Although the past studies have discussed the benefits of academic essay writing, there is a wide gap in the investigation of integrating the PBL and MT model to enhance student writing. The next section discusses the weaknesses of academic essay writing.

2.3.1.3   Weaknesses of academic essay writing

Despite the benefits of AW, there are some shortcomings that have been identified by some researchers in the ESL contexts. For instance, Jabali (2018) maintains that writing has always been seen as the most troublesome and challenging area of language learning for all the students without exception, especially if it has to be done in a foreign language. In addition, in an exploratory study of why so many students are anxious and confused about AW, French (2018:202) found that the students are anxious when they write for academic purposes and the lecturers fail to acknowledge the connection between emotions and the experience of producing error-free pieces of writing. This leads to the students' 'heightened anxiety' about their ability to write in the 'right' way, especially when they receive negative feedback (French, 2018:202). The shortcoming in this study is that the author did not specify as to whether the students become anxious when they write as individuals or as groups. The researcher contends that if ESL students write essays collaboratively, anxiety might not be experienced as the students will support one another in the writing process. In addition, the literature did not specify the category of students who become anxious when they engage in AW. This study seeks to explore the first-year ESL students and not students in general.

Furthermore, the assertion on students being anxious and confused as they engage in AW activities was also shared by Clughen (2014) in different versions. The author described what academic writers have written about the intense physicality and emotionalism of writing as a process of labour. According to the author, AW is equal to hard labour. The drawback in this literature is that it did not mention the outcomes of the physical and emotional aspects of writing. This study seeks to investigate the output thereof. It aims to establish whether after the hard labour the students' academic essay writing would be improved. In addition, the study sought to establish if PBL and MT can unburden the students of this 'hard labour'. Though some scholars have identified some weaknesses of AW, it is relevant to this study.

2.3.1.4   Relevance of academic essay writing to this study

AW is relevant to this study because the academic essay writing practices are acknowledged or implemented in some universities as French (2018) claims that AW is 'one of the principles by which the academy produces. According to the AW principle, the students are 'the core of the writing process and are not detached

onlookers' (Chokwe, 2011:25). Most importantly, by taking the less travelled road of using PBL and MT, this study brings fresh insights into the teaching and learning of AW. These insights will further contribute to clearing the murky waters on the best way to enhance student experiences in AW as there is currently no consensus on how students best learn AW.

2.3.1.5   Academic essay writing in the language classroom

Research shows that gender plays a role in language classrooms, especially when the students engage in essay writing activities. For instance, Preece (2018:9) posits that gender is part of the language learner's social world. Focusing on social relations in the writing classroom reveals that gender comes into play as a dimension of identity and how gender identities orient the students to academic writing. The assertion is consistent with Greece and Blackledge's (2018) claim that 'at times, men showed themselves willing to conform to the norms of academic discourse' (Greece & Blackledge, 2018:18). Thus, the male students seem to handle AW differently from the female students because they conform to the norms of AW easily.

Likewise, Jackson, Dempster, and Pollard (2015:305) articulate that the common ways in which the laddish masculinities were enacted in the classroom were through being loud and taking on the role of a joker (Jackson, et al., 2015:305). Gender in EAP research tends to be viewed as either synonymous with biological sex (male or female) or as being socially constructed (Appleby, 2009; Belcher, 2009; Hyland, 2015). What is not clear about these studies is that if masculinity plays a role in AW, what outputs were put in place? Did the male students produce error-free pieces of writing? This is still a problem to be investigated.

Furthermore, the investigation into the pedagogical and linguistic practices of the dynamic bilingual practices by two teachers, Palmer, Smith and McMillian (2014) revealed that modelling and engaging in dynamic bilingualism, celebrating hybridity and moments of metalinguistic commentary, and positioning children as competent bilinguals could be potentially powerful trans-language pedagogies. The shortcoming in this literature is that it did not state how these contribute to the student writing competencies. In the same light of argument, research has revealed a number of factors that were perceived to constitute 'good effective academic essay writing' (Chokwe, 2011:119) and these include the synergy in all school levels, reading for

leisure, encouraging students to use journals, more writing practice, explicit grammar teaching, the writing process, modelling, more student-lecturer interaction and providing feedback (Saddler, Muran, Grahan & Harris, 2004). Some studies relating to AW in ESL contexts are reviewed below.

2.3.1.6   Academic essay writing in English second language contexts

Research shows that the students experience challenges of writing according to the expected standards of AW. For instance, Fadda (2012:127) posits that the ESL students face many challenges and stresses in their academic essay writing, some of which are caused by failing to distinguish between the spoken and the written styles in the English texts. However, when they start with a draft, they tend to produce good writing. For instance, in a study on AW issues for foundation level students, Samaranayake (2017:216) found that the students who run several drafts, cognitively engage in a number of processes such as thinking, generating ideas relevant to the topic at hand, and casting from sentences. This assertion is supported by the researcher because there are a number of stages in AW where the students should adhere to instructions to produce clear, logical and error free texts. The stages include brainstorming the topic, drafting, revising, editing, and proofreading.

Likewise, Bitchener, Storch and Wette (2017) argue that a large number of students are now studying in the English-speaking contexts where the AW expectations are different to those in contexts where they have previously studied. This applies mainly at universities where students are expected to produce error-free assignments, tests, and dissertations. English as a second language is a system of instruction that enables the students who are not proficient in English to acquire academic proficiency in spoken and written English (Ovando & Combs, 2018:4). However, this does not apply to every student.

Knock, Rouhshad, Oon and Stoch (2015) investigated whether the writing of second language learners develops over three years of degree study in an L2 medium university, and what factors can explain the improvement or the lack thereof. The findings revealed that the participants had produced very little writing over the course of their degree program. The shortcoming in this study is that it did not state the models that were applied in the three years to try to enhance the students' writing. This is still a problem. This study seeks to remedy the observed shortcoming by integrating the

PBL and MT model to enhance AW in ESL contexts. Furthermore, research has revealed that the PBL methods were more successful than the students who have been educated in a traditional way (Bas & Reyhen, 2010). Moreover, the mobile technologies were proven as 'effective and successful in enhancing teaching and learning' (Saidouni & Bahloul, 2016:126).

Furthermore, in a study on 'exploring second language (L2) academic essay writing and the socio-constructivist theory to propose a theoretical framework for understanding written academic texts of English as a Foreign Language (EFL),' McKinley (2015) found that, critical thinking is shaped by the awareness of socio-cultural conventions of academic discourse. Besides, critical thinking arises from a writer's identity which is aligned with the culture of English academic essay writing (Bennet, 2018). Thus, critical thinking aligns to the English academic discourse.

2.3.1.7   Assessment of academic essay writing

An assessment is generally the act of using questions to reveal the extent to which the teachers are changing the learners' academic performance through learning (Setiawan, 2019). It also refers to a 'variety of methods or tools that the educators use to measure or evaluate and document the learning progress, academic reading, skills, and educational need of students' (Warburton, 2006). The primary purpose of an assessment is for the learners to provide the evidence of learning by indicating an understanding of the content and the achievement of learning outcomes. The educators use various rating scales to assess the learners at different levels as Choshi (2015) posits that the innovative teachers develop teaching strategies that are suitable for the lesson and the types of learners they teach. According to Warburton (2006), a good essay includes focusing on answering the question asked, researching, and planning of one's essay, building and sustaining an argument and improving one's writing style and tone.

2.3.1.8   Models of academic essay writing

Research shows that there are various models that explain academic essay writing in ESL contexts. For this study, the researcher identified the relevant models. The cognitive process model that was proposed by Flower and Hayes (1981), has the working memory as a critical component of mediating the successful coordination of writing sub processes (Semaranayake, 2017: 216; Hayes, 1996; Kellog, 1996) and the

stages of the writing process as proposed by Laksmi (2006), are considered relevant for this study. The rationale for choosing these models is that they explain the writing processes, which is the focus of this study. Most importantly, they take into cognisance the cognitive aspect of the student. The models are discussed below:

2.3.1.8.1   The cognitive process model

Figure 2.1 that follows presents the cognitive model as proposed by Flower and Hayes (1981)
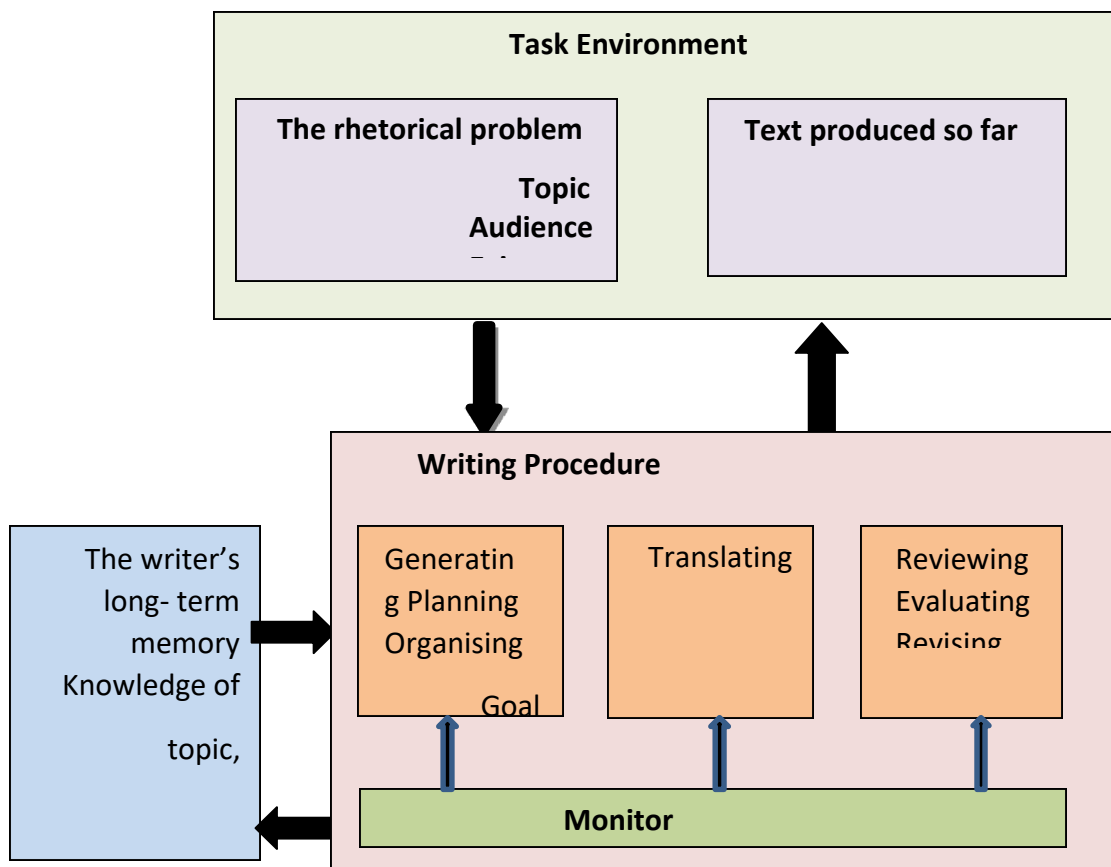
Figure 2.1: The cognitive process model (Flower & Hayes, 1981)

According to Flower and Hayes (1981), the cognitive process model comprises of three elements: the task model, the writer's long-term memory and the writing process. The first element being *the environment component* includes the "rhetorical" question in which the writer solves or responds to the problem. At this point, the writer describes the topic and defines the rhetorical problem that is relevant to the audience. The *environment component* is followed by *the writer's long-term memory,* which refers to the writer's specific knowledge of the topic.

According to Flower and Hayes (1981), at this level, the long-term memory deals with the audience and the writing plan which is also known as the presentation. Lastly, *the writing process* includes planning, translating, and reviewing. The three elements are applicable in academic essay writing.

In describing the task environment in detail, Flower and Hayes (1981), state that 'a new element enters the task environment, and it places more constraints on what the writer can say as composing proceeds. Just as a title constrains the content of a paper and a topic sentence shapes the options of a paragraph, each word in the growing text determines and limits the choices of what may follow. The authors further state that a growing text demands more time and the writer's attention during composing because the writer has to deal with two other elements which are the writer's knowledge which is stored in long- term memory and the writer's plan for dealing with the rhetorical problem. Flower and Hayes (1981) further posit that the 'long-term memory is a relatively stable entity and has its own internal representations' (Hayes, 1981:371). Thus, the long-term memory stores information for a longer period. The writer's long-term memory can exist in his/her mind as well as in outside resources. In addition, the long-term memory is perceived as a storeroom of knowledge about the topic, the audience, and the writing plans.

Furthermore, in the planning stage, according to Hayes and Flower (1981), the writers form an internal representation of the knowledge used in the process of writing. Planning involves a range of sub-processes such as generating ideas where the writer retrieves relevant information from his/her long-term memory. Conversely, generating ideas from the writer's long-term memory may not be sufficient as the ideas may not be organised. Therefore, the next sub-process of organising comes into play where the writer groups facts, forms new concepts and presents ideas in an orderly manner that is relevant to the topic at hand. Most importantly, the organising of ideas is usually guided by the major goals that are established during the process of goal-setting, which according to Hayes and Flower (1981), is the next important aspect of the cognitive process model.

In addition, the next stage considers the writer who is responsible for creating goals. At this stage, the writer's goals are generated, developed, and revised in

the same processes that generate and organise new ideas' (Flower & Hayes, 1981:371). The process continues throughout the composing stage. Furthermore, the setting of goals leads a writer to generating ideas which may lead to new, more complex goals that can then be integrated with the content and purpose of the composition (Semaranayake, 2017:216).

In addition, the authors of the cognitive process model argue that 'the act of developing and refining one's own goals is not limited to a pre-writing stage in the composing process, but it is intimately bound up with the on-going moment-to-moment process of composing' (Flower & Hayes, 1981:371). The next critical element in the model is the translating process in which the writer presents the ideas generated in planning into visible language, which is a linear piece of written language.

As illustrated in Figure 2.1, reviewing depends on two sub-processes: evaluating and revising (Semararanayake, 2017). The author further argues that in reviewing, the writer chooses to read what he/she has written either as a spring-board to further translating or to evaluate or revise the text. The reviewing process can occur as an unplanned action that is driven by an evaluation of either the text or one's own planning. The last step of the model is the monitor that functions as a writing strategist. The monitor determines when the writer moves from one process to the next. As the writers compose, they also monitor their current process and progress. Most importantly, Hayes and Kellog (1996) posit that it is not enough to have available linguistic and meta-cognitive knowledge while writing.

Considering the cognitive process model that is proposed by Flower and Hayes (1981), it may be concluded that the process of producing an academic text for each one of the three processes, is required in the process of academic essay writing. There seems to be a parallel correspondence between the meta-cognitive abilities discussed above and the stages that include planning, translating, and reviewing as outlined in the cognitive process model by Flower and Hayes (Semaranayake, 2017: 216).

The other model of writing is consistent with the cognitive process model by Flower and Hayes (1981) and the writing process approach as proposed by Laksmi (2006: 146-147). The writing process approach includes the five stages of essay writing which are pre-writing, drafting, revising, editing, and publishing. The stages are discussed below.

2.3.1.8.2   Stages of the writing process approach

Laksmi (2006:146) maintains that there are five stages of the writing process approach.

Stage 1: The Pre-writing Stage: The pre-writing stage can take about 85% of the writer's time. The writer focuses on the subject of his writing and the audience before starting with the writing. The pre-writing stage includes choosing a topic, gathering ideas, organising ideas, defining a topic sentence, and outlining.

a. Choosing a topic: Laksmi (2006:147) claims that the more students are interested in their own topic, the more communicative language ability increases, because they choose essay topics they know. Allowing students to choose their topics assists them in developing their confidence about what they intend to write about.

b. Gathering ideas: Some students have difficulties in gathering ideas for their writing. Therefore, the teacher deliberately introduces to the students, some of the different techniques of gathering ideas such as brainstorming, reading, and interviewing (Lakismi, 2006:145). With brainstorming, the teacher advises the students to use diagrams randomly, and to list ideas to help themselves develop both ideas as well as the word lists for their writing. The students also decide on the sort of writing, the audience wants and determine the purpose for their writing. With reading, the teacher advises the students to read their books to gather information and interesting vocabulary about topics of their choice. Liebensperger (2003:2) maintains that reading may be helpful for the ESL students when they are unfamiliar with the topic. Moreover, Lephalala (2014: 7) claims that reading is an active process akin to problem-solving. In this stage, the teacher advises the students to seek for clarity or any information regarding their essay topics. According to Laksmi (2006: 146), this process is called interviewing.

c. Organising ideas: The teacher advises the students to organise their ideas as follows: Firstly, by going through their ideas and crossing out irrelevant information

or information that no longer seems in use to the topic, but they must not erase it completely for use at a later stage. Secondly, the students must put the most closely related ideas together in a group, so at this stage, they do not worry about the order of ideas. Lastly, the students look critically at their ideas to identify the ones that lack sufficient support to the topic (Cameron, 2009: 2).

d. Defining a topic sentence: The students write topic sentences. The teacher reminds the students of the importance of topic sentences in an academic essay body paragraph, as it unifies the contents of the paragraph and helps the writer to organise the main ideas of the essay, thereby creating unity in each of the paragraphs.

e. Outlining: The students write the outlines for their topics. After that, they organise the ideas that they have collected and get enough knowledge on writing the topic sentence. By so doing, the students learn to write an outline of their essays.

Stage 2 Drafting: In this stage, the students write the rough drafts of their academic essays. Most importantly, the emphasis is on the content rather than on the mechanics. In addition, the students listen to the teacher's instructions, the explanations and the demonstrations and implement them in their writing.

Stage 3 Revising: In this stage, the students revise their drafts. They further discuss their writing among themselves and with the teacher. Furthermore, the students participate constructively in discussions about their essays to make changes and reflect the reactions and comments of the teacher.

Stage 4 Editing: The editing stage comes after the revising stage. In this stage, the students work to make their writing 'optimally readable' (Laksmi, 2006:153). Moreover, they correct their mechanical errors such as grammar, spelling, capitalisation, and punctuation, using their MT devices. The teacher provides them with checklists to check the mechanical mistakes.

Stage 5: Publishing: In this stage, the students make final copies of their drafts and hand them to the teacher. The reader of their writing is the teacher. Publishing has its advantages for the students because sharing ideas with the audience can promote

students to the real communication world with their readers (Laksmi, 2006). The stages are summarised in the table that follows.

Table 2.1: Summary of the Writing Process Approach

Step	Description	Strategies
Prewriting (Think)	1.Decide on a topic to write about. 2.Consider who will read or listen to your written work (audience). 3. Brainstorm ideas and organise thoughts about the subject. 4. List places where you can research information.	Drawing, talking, brainstorming, graphics, research, listing
Drafting (Write)	1.Put the information you researched in your own words. 2. Write sentences and paragraphs even if they are not perfect. 3. Read what you have written and judge if it says what you mean	Taking notes, organising thought into paragraphs, writing first draft
Revising (Make it better)	1.Refining the piece of writing. 2. Read what you have written again. 3.Rearrange words or sentences. 4.Take out or add parts. 5 Replace overused or unclear words. 6. Read your writing aloud to be sure it flows smoothly.	Self- editing, peer editing, conferencing with teacher
Editing (Make it correct)	1.Be sure all sentences are complete. 2. Correct spelling, capitalisation, and punctuation. 4. Have someone check your work. 5. Recopy it correctly and neatly.	Rubrics, editing checklist, proofreading
Publishing (Share the finished product)	1.The writing piece is prepared in final form. 2. Sharing writing with others.	Read aloud to a group, sharing friends and teacher, web publishing (Blogs)

2.3.1.9   Summary

Overall, academic essay writing is critical in this study as it provides the insight of what other scholars have discussed. Although academic essay writing is considered a critical activity at universities, and is relevant in this study, the other models of writing that were discovered prior to the academic essay writing models should not be overlooked.

The section that follows reviews the literature on PBL in higher education contexts. The discussion begins with the definitions of PBL, and it is followed by the benefits and the weaknesses of PBL. Thereafter, PBL in language classrooms is reviewed, and it is followed by PBL in ESL contexts. Lastly, the literature on the models of PBL is reviewed.

2.3.2 Project- based learning in higher education contexts

Research shows that project-based instruction was introduced in ESL contexts as one way to reflect the principles of student-centred teaching (Chang & Lee, 2019). For instance, Montenegro Ordóñez (2018: 2) argue that projects establish a direct link between language learning and its applications and create opportunities that permit ESL learners to develop their abilities in the English language by communicating and interacting with one another as well as with native English speakers. The assertion is supported by Beckett (2005:191) in a study on academic language and literacy socialisation through PBL, who found that the ESL learners at university actively construct meaning from project-based instructions.

Employing projects 'establishes a direct link between language learning and its application' (Montenegro Ordóñez, 2018: 2). In addition, it creates opportunities that allow the ESL students to develop their abilities in the target language as they interact and communicate with each other and with the native English speakers. The shortcoming of the study is that it did not investigate the integration of PBL and MT in such learning environments which is the focus of this study. The researcher believes that by integrating PBL and MT at institutions of higher learning, the ESL learners might develop their abilities in the English language and their communication in the form of writing and interaction with one another and with native English speakers may improve.

Before discussing the benefits and weaknesses of PBL as a teaching and learning approach, it is crucial to provide the definitions of PBL as discussed by some researchers and provide the definition within the current study. The definitions are grouped in commonalities and the differences for simplicity and for the flow of information.

2.3.2.1   Definitions of project- based learning

The definitions of PBL prior to 2000 focused more on learning where the students engage as a group to try to gain knowledge or solve a problem. For instance, Dellenbough, Baker, Blaye and O' Malley (1995:189) define PBL as learning in which two or more learners engage in the process of learning a new knowledge. Similarly, Moss (1998) explains PBL as an approach that contextualises learning by presenting students with products to develop, or problems to solve. This includes the complex tasks such as problem solving, designing, decision making and the investigative culture. Tasks such as reading, ordering, and sorting information, as well as comparing and problem-solving are combined in working towards an agreed goal which is centred in a theme or topics, that are relevant to the content being studied (Stroller, 1997).

Subsequent to 2000, the researchers began to re-focus their attention on the role of a teacher who gives organising projects to students to work independently. Clarke (2009) defines PBL as an approach that organises learning around projects which serve the purpose of motivating and engaging students as they are involved in the process of learning, and they can see the connection of what they are learning with the real world. In a PBL context, the responsibility falls on the learners, and the teachers become facilitators, as well as enablers or activators in guiding the students' learning (Fullan, 2013; Hatti, 2009).

Most recently, from 2010 upwards, the researchers appear to agree that PBL is a student-centred approach, which empowers the students to work independently. For instance, Nariman and Chrispeels (2016: 2) define PBL as a student-centred approach that supports the instructional demands of the reform standard. This approach is characterised as a model of teaching that is aligned with the principles of constructivism which also emphasise collaborative learning (Laur, 2021). Thus, PBL encourages group work among students. Similarly, Savery (2015) defines PBL as an instructional and curricular student-centred approach, which empowers the students to conduct research, to integrate theory as well as practice and apply knowledge and skills to develop a viable solution to a defined problem.

Furthermore, PBL is an approach that involves no teaching; the students learn by solving problems that are 'carefully constructed by the teacher according to the course syllabus that is assigned to them throughout the semester' (Othman & Shah, 2013:

126). Thus, the teachers design projects and step aside to give the students an opportunity to conduct research and solve problems. In the same vein of argument, Thitivesa (2014) describes PBL as an instructional 'approach that lends itself to the integration of language and content-learning objective' (Thitivesa, 2014:2994). The researcher agrees with the above author and adds that with the integration of MT, student writing can be enhanced.

In this study, PBL is referred to as an approach to learning that is centred around the students. The students acquire knowledge and skills on their own through exploring the challenges as well as the problems and they tend to solve them collaboratively. Furthermore, it is an approach that is characterised by collaborative learning, exploration, working on a project, the completion of tasks and assessment practices. In addition, this study considers PBL as an approach that captures learning through the use of mobile technologies. This definition correlates with the theoretical framework that underpins this study. The OCL theory as proposed by Harasim (2012) focuses on teaching and learning through computers and the internet. This is relevant to this study because the aim is to explore how an integrated PBL, and MT model can enhance the first-year students' writing competencies in an ESL context. Like any approach to teaching and learning, there are benefits for PBL.

2.3.2.2   *Benefits of project-based learning*

The research and the teachers' experiences of implementing PBL in language classrooms demonstrated that the active instructional techniques such as PBL can motivate the bored students and may contribute to raise their understanding of content that leads to achievement (Rahman, 2019).This assertion is supported by Bas and Reyhen (2010) who did an investigation which took two consecutive years (2009-2010) on the effects of PBL and the traditional foreign language teaching environment on the students' achievement and their attitude towards the English lessons. The findings of this study were that the students who were educated using the multiple intelligence approach that was supported by the PBL method were more successful than the students who have been educated the traditional way. Furthermore, there was a significant difference between the achievement levels of the students who have been educated by multiple intelligence supported by PBL and those who have been educated by the traditional teaching methods (Bas & Reyhen, 2010:377). The assertion corresponds with Freeman's (2000:170) claim that in learning through

multiple intelligence, 'everyone might possess eight intelligences, which are not equally developed in any one individual'. Therefore, these intelligences need to be activated by creating activities that are frequently used in the classroom and are categorised according to the intelligence type. The shortcoming of this study is that it did not investigate the students' integrating MT to find out if it will not yield good results, especially with the group that has been educated the traditional way. This study seeks to explore whether the students taught using the traditional way will or will not improve their academic essay writing if PBL and MT were to be integrated into their learning.

In a study on PBL in the era of reform standards, Narman and Chispeels (2016:3) note that the main benefits of PBL are that the students learn to retain information better and longer when they actively engage in their own learning in a setting that is designed to motivate them. This assertion correlates with Gulbahar, Beckett, and Slater's (2005) claim that project-based instruction is a valuable way to promote the simultaneous acquisition of language content and skills. However, they also indicated that it would be successful provided the students in the academic ESL classes can see the value of learning through projects. In a PBL setting, the students working in a group, play an important role in constructing their own learning when they participate actively in the project.

In the same vein of argument, Li (2018) claims that the main benefit of PBL is that learning happens in small student groups where meaning is negotiated in a collaborative team setting. The students work together towards a common goal in small groups (Johnson, Zhang & Kahle, 2012) and emphasise collaboration and student-training (Duch, Croh & Allen, 2001; Prince, 2004).

Furthermore, in the study on the designing of an instructional unit for teaching writing skills in an intensive English program using an adapted model for PBL which lasted for seven weeks, Asher (2015) found that despite the success of the seven-week instructional unit, there were still some areas that needed improvement for future implementation and research on PBL. The findings indicated that PBL can be employed successfully in language teaching situations especially in teaching writing. The shortcoming of this study is that it did not integrate PBL and MT to ascertain if that would yield the same results. The mobile devices that are connected to the internet may help to enhance student writing. This is supported by the theoretical framework

that was employed for this study, which is the OCL theory (Harasim, 2012), that emphasises knowledge creation and innovation with computers as well as the internet.

Furthermore, the research shows that PBL is effective in enhancing learning for socio-economically disadvantaged diverse students regardless of the ethnicity group, age, and prior achievement (Cuevas, Lee, Hart & Deaktor, 2005). Thus, PBL caters for all the students regardless of the socio-economic factors, the ethnicity group, and age. Like any other approach, there are PBL weaknesses (Whitmer et al., 2010).

2.3.2.3 *Weaknesses of Project-based Learning*

Despite the benefits of PBL, there are some shortcomings that were identified by other researchers. For instance, in a qualitative study on collaborative heterogeneous PBL learning, Singaram, Van der Vleuten, Stevens and Dolmas (2011: 297) found that the ESL students felt constrained from contributing to English spoken tutorial group sessions and were passive participants within the group. This assertion is supported by Engelbrecht and Wildsmith's (2010:108) findings that in classes consisting of students from different language backgrounds, the EFL speaking students tend to take a lead in group discussions, thus not allowing the ESL speakers to make contributions. The shortcoming of the assertions is that the researchers focused on the PBL tutorial groups which dealt with students' self-perceptions only. This study focuses on tutorial group sessions that inculcate the use of PBL and MT to enhance student writing. Furthermore, the researcher concurs with the researchers who highlighted the need for language development courses to be included formally in the curriculum to encourage group discussions because the interactions would then enhance the quality of collaboration among the students in the educational settings (Engelbrecht, 2010:108).

In addition, in an investigation conducted between 2015-2017 on the challenges encountered by the educators and the students in the PBL classrooms, Ponpoon (2015) found that the educators encountered challenges that include the lack of instructional resources which was one of the main reasons PBL tutors find themselves challenged by the new curriculum (Massa, Dischino, Donnely, Hais & Delaura, 2012). Similarly, Naiman and Chrispeels (2016:4) argue that PBL poses challenges for the teachers in reconstructing their own understanding of teaching whereby the inquirers and students drive instruction (Park & Ertmer, 2007).

In their review of literature on the use of PBL for teaching, Ertmer and Simon (2006) identified three challenges that the teachers are likely to encounter in PBL such as creating a culture of collaboration, independence: scaffolding students learning and performance as well as adjusting to changing roles. In the same vein of argument, Tamin and Grant (2013) identified the challenges for teachers implementing PBL such as adopting to new instructional strategies; designing and managing PBL; applying a constructivist approach when teaching; developing a PBL curriculum and the selection of topics that are relevant to the PBL teaching approach and the nurturing of collaboration. However, the same scholars found that the teachers were enthusiastic about the implementation of PBL despite the challenges they faced as they shifted from a traditional approach to teaching which is teacher-centred to a student-centred approach. The drawback of this study is that it did not investigate the challenges encountered by the educators in the PBL class using MT. Moreover, the literature focused on both the educators and the students. This study focuses on the students' experiences of using an integrated PBL and MT model to enhance student writing. This study focuses on the students than the educators.

The other challenges as discussed by the other studies include the students being reluctant towards adopting the PBL approach (Rogers, 2014; Sin & Bridge, 2016). However, Armant and Shin (2012) argue that the new curriculum can be the cause of anxiety and demotivation at times (Jin & Bridges, 2016). The drawback of this study is that it focused more on the implementation of PBL in general terms by the students and the educators than on enhancing AW. The researcher contends that if the focus was narrowed, perhaps the challenges would have not existed or would have been minimal. In addition, the literature did not integrate PBL and MT to enhance the students' writing. The focus in this study is on the integrated PBL and MT method to enhance the students' writing with the hope that there will be desirable outcomes. Despite the weaknesses of PBL, it is relevant to this study.

2.3.2.4   Relevance of project-based learning to this study
This study adopts the PBL because it is a learning approach that is student self-centred, self-directed and fosters collaboration and encourages problem solving among the students (Savery, 2006; Stauffacher et al., 2006; Brundiers et al., 2010; Brundiers & Wiek, 2011), which can assist in improving student writing. Moreover, the PBL approaches engage students in inquiry-based research for complex problem

solving. The inquiry- based research that is also supported by the OCL theory is employed in this study. The next theme that is reviewed is PBL in the language classroom.

2.3.2.5   *Project-based learning in the language classroom*

Research shows that that the PBL that is employed in the language classrooms yields good results. For instance, Petersen and Nassaji (2016) conducted a mixed method study in which they examined and compared the teachers and the students' beliefs and attitudes towards PBL, as well as the extent and manner of project implementation in L2 classrooms. The findings revealed that the teachers showed a more positive attitude towards PBL than the students towards project-based learning in general. Furthermore, the findings of the interviews provided additional insights into the teachers and the students' perspectives towards projects, including, among others, the projects they used, the goals of the projects, and the strategies to implement projects (Petersen & Nassaji, 2016:13). Almost all the teachers in the interview indicated that project work is an effective strategy for learning language. The shortcomings of this study are that it did not examine the students' conceptions on the integrated PBL and mobile technologies in the language classroom. This is still a problem to be investigated. This study seeks to investigate the students' conception of the use of PBL and MT to enhance student writing in the language classroom. Another drawback of this study is that it focused more on the teachers' views on the use of PBL than on the instructions they give students on how to engage in PBL settings. Re

Harvorsen (2018) examined some of the changes that are currently taking place in the 21st century education system. The study looked at the '4Cs' which are communication, critical thinking, collaboration, and creativity and these were tested in teaching English to Spanish-speaking students in Mexico. The findings were that the students were able to practice each of the 4Cs that suited their needs and interests. They also focused on the digital literacy skills and created a final product they were proud of. The researcher concurs with the literature that through the integration of PBL in the language classroom, the students can produce desirable outcomes. The study applied the 21st century learning skills that align with the current state of education. Most importantly, the study used the digital literacy skills that align with an integrated PBL and the mobile technologies mode to enhance student writing. This is also

supported by the theoretical framework (OCL) that was selected for this study which suggests the use of online technologies to enhance AW. The shortcoming of this study is that it did not test the 4Cs in teaching the university ESL students. There is still a problem to be investigated. PBL in the ESL context is reviewed below.

2.3.2.6   PBL in the English second language context

Research shows that the students' writing improves when they engage collaboratively. For instance, in a study on academic language and literacy socialisation through PBL, Beckett (2005) found that the ESL learners actively construct meaning from project-based instruction, however, there were clashes that existed between the language policy teacher perceptions and the ESL students' perceptions of the same activity. In other words, though the students were able to construct meaning from the PBL instruction, there were some misunderstandings among the students' performances on project-based activities and the teachers' views on the same activities (Beckett, 2005:19).

Furthermore, in a study of examining the opportunities of the internet, technology, and the media in teaching ESL inside the classroom and out of the classroom, Richards (2015) revealed that the growth in affordance and the opportunities for out of the classroom learning that are available to language learners create some challenges and opportunities for the teachers and the students. Out of the classroom, language learning raises issues for second language acquisition (Richards, 2015). However, Andrei (2014:35) argued that technology in language teaching has brought benefits such as increased participation, engagement, and collaboration among students. Thus, the ESL acquisition can happen not only inside the classroom but out of the classroom with the aid of MT to enhance it. Similarly, Gallaher, Beckett and Slater (2005:108) argue that 'project-based instruction is a valuable way to promote the simultaneous acquisition of language content and skills, provided that the students in academic classes can see the significance of learning through projects'. The researcher concurs with the previous authors in the sense that language acquisition is not restricted by the walls of the classroom. ESL acquisition is possible inside classroom and out of classroom. 'The success of the out of class learning may vary for individual learners' (Bailey, 2011:128).

Similarly, in a study that evaluated the effectiveness of PBL for professional development training at a literacy centre on nine ESL teachers working in a workforce, Garner (2018) found that none of the teachers chose to implement PBL in their teaching. The perceptions are that the age proficiency level, and the student acceptance were barriers that affected implementation (Gerner, 2018). The drawback of this study is that it did not provide the reasons why the teachers could not implement PBL in their teaching. Furthermore, the study did not specify the age proficiency level of the investigated students. This is still a problem to be investigated. Some of the PBL models that are relevant to this study are discussed below.

2.3.2.7   *Models of project-based learning*

The research shows that the various PBL models were suggested by different authors in the ESL contexts. However, not all the models are relevant to this study. This study adopted the essential design elements of the PBL model that was proposed by Helle, Tynjala and Olkinuora (2006); and the steps in PBL that were proposed by Thitivesa (2014); and the instructional features for computer-assisted PBL that were described by Sidman-Taveau (2005). This study considers these models as relevant because they focus on the collaboration of students in various writing projects, and this is also the focus of this study. The models are reviewed in the section that follows.

2.3.2.7.1   *Essential design elements of PBL in an ESL context element*

According to Helle et al. (2006), there are five essential elements of a project in ESL.

Figure 2.2: The essential design elements of a project in ESL (Adapted from Helle, Tynjala & Olkinuora, 2006)

Firstly, the *project overview and the rationale* stage provide the students with an introduction to the topic of the project and puts the project within the framework of the course goals and the objectives. Thus, the project overview provides an explicit explanation of the purpose of the project. Secondly, the *learning objectives and the key concepts* are stated**.** After having introduced the project and the context of the course, the learning objectives and the key concepts must be stated explicitly. Thirdly, the *material and the resources* are identified*.* The instructor makes it a point that the learning materials and the resources are identified and are available for the students. These may include the relevant literature and the research, as well as the multimedia resources that are relevant for the project. The learners are not limited to the material that is provided by the instructor. They may bring their own for as long as it is within the project scope. Fourthly*, enabling the task* is clarified**.** At this stage, there are tasks that provide clear directions, clarify purpose and expectation, direct the learners to appropriate resources and the learning momentum (Mckenzie, 1999). Furthermore, the tasks provide opportunities for collaborative learning, and they promote interactivity and interaction among the learners. Lastly, there are *assessment strategies***.** A rubric may be used to assess a learner's work. A rubric may include a checklist of the required components and it can also include the instructors' feedback (Helle et al., 2006:292).

Considering the PBL model as suggested by Henle et al. (2006) it can be concluded that the students whose learning environments integrate the five elements of PBL learn better and their performance can improve.

In a study on PBL in post-secondary education, the above-mentioned authors found that PBL affords the 'students the possibility and the motive to work their way to the solution in their own idiosyncratic way' (Hele et al., 2006:292). In other words, the learners' prior knowledge and the experiences are activated when they engage in project-based tasks. The essential design elements of a project in ESL as discussed by Hele et al. (2006:292) may arouse the students' interest in language projects in real life (Sudarwati & Manipulska, 2020:16).

Consistent with the five essential elements of PBL, Thitivesa (2014) proposed the features of the project development structures commonly found in other projects. The

features of PBL as proposed by Thitivesa (2014) are reviewed as presented in the steps below.

2.3.2.7.2   Steps of project -based learning

Step 1: Includes choosing a suitable topic for the project, generating interest and a sense of commitment via the use of perceptual and inquiry arousal. To facilitate the topic initiation, an umbrella topic that is connected to the studied content is given to the students. In addition, a list of related topics is given to the students as guiding examples, but this is optional.

Step 2: Requires negotiation between the class and the teacher for the choices of the outcomes of the project, namely the article review. In the context of this study, the academic essay review as well as the audience for the project work.

Step 3: Determining the content and structuring the project

In this stage, the students and the teacher agree on the scope of information that is needed to gather sources of data, the tentative timeframe, and the roles of each group member.

Step 4: Prepares the students for the demands required by the project work in both content and language via a variety of teaching activities (e.g., the lectures on the relevant approaches and methods, workshop for summary writing, reflection writing and lesson plan design).

Step 5: Students leave the classroom for gathering information from the sources agreed on in Step 3. The students are instructed to share information and discuss in teams for a consensus as to which information should be used or discarded. The sources are saved for a reference list.

Step 6: Bring the students back into the classroom and let them sort out the gathered information by analysing and organising data for writing up the revised article. In this study would be the revised essay.

Step 7: The students submit to the teacher the outcomes based on the agreement in Step 2. The students are allowed to re-work their writing until their intended message was clearly communicated. The teacher gives the students feedback on content and language. The feedback serves as guidance for correction (Thitivesa, 2014: 2884).

In addition, Sidman-Taveau (2005:284) indicated that the 'researchers identify a number of instructional features which have shown to assist in the effective application of computer-assisted project learning'. Thus, the computer-assisted project learning is relevant to this study because it considers learning through the use of technology which is the focus of this study. The instructional features are presented in Table 2. 2 and they identify the key features of PBL that are consistent with the steps of PBL. In the context of this study, the instructor organises the learning material that relates to real-life problems such as essay writing.

In a PBL context, learning is centred around the students (Nariman & Chrispeels, 2016:2), and the teacher facilitates it. Thus, the teacher provides the students with learning instructions and the students engage in problem solving. Most importantly, the students work collaboratively to solve problems. At the end, the students are given more activities to make sure that they get used to working in groups.

Table 2.2: Instructional features for computer-assisted PBL (Adapted from Sidman-Taveau, 2005)

Instructional Feature	Activity
1	Organisation of learning around real world problems
2	Student centred instruction
3	Collaboration
4	Teacher as facilitator
5	An emphasis on authenticity
6	Formative assessment
7	Reflection
8	The production of authentic artifacts
9	The use of computers to support learning and instruction

2.3.2.8   *Summary*

In summary, the PBL models are critical in this study because they focus on learning that is student self-centred, self-directed and fosters collaboration and problem solving among students (Savery, 2006; Stauffacher et al., 2006; Brundiers et al., 2010; Brundiers & Wiek, 2011). Most importantly, PBL because is the learning approach that is relevant in the 21st century.

The section that follows reviews the literature on MT and how it can enhance student writing. The discussion begins with a review of MT in a higher education context, which is followed by the definitions of MT, the benefits of MT as well as the weaknesses of MT. Furthermore, the literature on MT in language classrooms is reviewed, and it is followed by MT in an ESL context. Lastly, the literature on the models of MT is relevant to this study.

2.3.3 Mobile technology in a higher education context

Mobile technologies are an ever increasing 'must have' in modern society and they are finding their way into every aspect of our lives, especially in the education sector where the instructors and the students use them to enhance teaching and learning (van Praag & Sanchez, 2015:2). This assertion is supported by Gan and Balakhrishnan's (2018) claim that online learning when combined with MT transforms the traditional classroom from being teacher-centred to being a student-centred classroom. In addition, these assertions are consistent with Dimetresu's (2014) claim that for an education system to be effective, it has to be not only attuned to the needs of the society at large, but it also has to be well-adjusted to the students' mind-set, behaviour patterns and horizon expectations. The author was referring to the young generation which is also known as the 'digital natives' whose environment is dominated by high-speed technology, multi-tasking, and interaction (Dimetresu, 2014:148). Thus, the young generation of the 21st century have grown up immersed in the digital world, surrounded by different mobile technologies and are proficient in the language of computers and the internet. In addition, Naicker, Singh, and van Genugten (2021:1) claim that collaborative learning 'aims for students to take substantive responsibility of working together, and by working together, students become the driver and creator of new knowledge in the unfolding processes of researching, meaning-making, information sharing and adapting' (Naicker, et al., 2021).

Conversely, Junco and Mastrodicasa (2007) argue that the name 'digital natives' does not equally apply to all young people worldwide as there are still young people who do not have such easy access to the latest technologies and devices.

Thus, not all the young people do not own mobile technologies. Therefore, not every youth is a digital native.

Nur Ehsan et al. (2013:95) point out that the MT in the form of social networks such as Facebook, Wikis and Blogs designed for social interaction purposes are forcing their ways into institutions of education. However, Andrei (2014) argued that the mere presence of technology alone does not lead to improved teaching and learning by itself. It needs to 'follow good instructional strategies '(Andrei, 2014: 35). Thus, technology alone does not improve teaching and learning. Good instructional strategies coupled with MT can improve teaching and learning.

In promoting innovation in education through technology, not only does MT support traditional lecture-style teaching, but through convenient information gathering and sharing, it can also promote innovative teaching methods such as cooperative learning (Lan, Sung & Chang, 2007; Roschelle et al., 2010). Furthermore, it can promote exploratory learning outside the classroom (Liu, Lin, Tsai & Paas, 2012), and game-based learning (Klopfer, Sheldon, Perry, & Chen, 2012). Therefore, MT has great potential to facilitate the development of communication, problem solving, creativity, and other high-level skills among students (Warschuer, 2007:41).

Various definitions for MT were proposed by various researchers for various reasons. Some of the definitions, that are relevant to this study are reviewed below.

2.3.3.1   *Definitions of mobile technology*
MT prior to 2000 focused on computers known as Computer-Assisted Language Learning (CALL). For instance, Gunduz (2005) defined CALL as an approach that allowed learning to become 'more student-centred as students can access computers at home to further research and study what they want at their own pace' (Gundez, 2005:193). Thus, MT prior to 2000 focused more on computers than on online connections in teaching and learning environments.

Subsequent to 2000 the researchers began to refocus attention on CALL and Mobile-Assisted Language Learning (MALL) which both had impacted language

acquisition and had also 'distinguished a contemporary language classroom and a traditional language' (Erbert, 2009:754). For instance, Zaki and Yunus (2015:12) defined MALL as learning with the aid of handheld technologies such as mobile phones, PDAs, iPods, iPads, and other similar devices which could have an impact on language learning'. Some researchers named the learning through MT devices as *m-learning* and *e-learning*.

In addition, Sharples, et al. (2005) defined e-learning as 'the learning supported by digital electronic tools and media and m-learning as e-learning using mobile devices and wireless'. Thus, e-learning and m-learning are learning methods that incorporate the internet. The researcher is of the view that the scope of *e-learning* contains that of *m-learning*. Sheperd (2001) defines *m-learning* as resting not only on the mobile technologies, but also on the mobility (cited from Seppala & Alamaki, 2003:330). However, Brown and Mbati (2015:116) described *m-learning* as 'still in its infancy' and requires more research to strengthen the concept of m-learning for a clearer definition. In other words, research still needs to be conducted on *m-learning.*

According to Chinnery (2009), the increasing use of mobile devices for learning in the education field has given origin to what is known as 'mobile-assisted learning. MALL was first coined by Chinnery (2006), as the use of mobile devices to support language learning. Kukulska-Hulme and Shield (2008) note that although MALL has been considered as a subset of both mobile learning and CALL, MALL differs "in its use of personal, portable device that enable new ways of learning, emphasising 'continuity of access and interaction across different contexts of use' (Kukulska-Hulme & Shield, 2008:273). MALL means learning with the aid of handheld technologies such as mobile phones, PDAs, iPods, iPads, and other similar devices which could have an impact on language learning (Valarmathi, 2011; Sunnetha, 2013; Ali, 2014). In other words, the laptops are not advisable to use in the context of MALL as Viberg and Gronlund (2012) claimed that 'only lightweight' devices are used.

The definitions of MT prior to 2010 focused on the use of technology in face-to face learning environments. According to Chinnery (2006:9), the increasing use of m-learning in the language education field has given origin to what is known

as MALL, or language learning facilitated by the mobility of the learner and/or the portability of mobile devices. Baledgizadeh and Oladrostam (2010) refer to MALL as the learning approach that can be 'implemented in numerous forms including face-to-face, distant, or online modes' (Baledgizadeh & Oladrostam, 2010:79). This assertion is also supported by Kim (2012) who claimed that MALL enables the students to move easily and more promptly to access language learning material and communicate with people at 'anytime' from 'anywhere' (Kim, 2012:35).

Subsequent to 2010, the researchers began to re-focus on MT in distant learning. For instance, Begum (2011) described MT as an approach to language learning that is enhanced through using mobile devices such as mobile phones, MP3/MP4 players, PDAs, and palmtop computers. The devices can be used to extend teaching and learning outside the classroom. Moreover, teaching and learning can be extended outside the classroom through the use of MT and the internet. This correlates with the OCL theory that is discussed at the beginning of the chapter.

Most recently the researchers appear to agree that MT involves the use of smartphones and other digital devices that can enable the students to connect locally and internationally. For instance, Sung, Chang and Liu (2015) define MT as individual small computers that contain exceptional computing power, such as laptops, PDAs, tablets, PCs, cell phones, and e-book readers. These devices combined with wireless communication and context sensitivity tools, make one-to-one computing a learning tool of 'great potential' in both the traditional classroom and the outdoor informal learning (Sung, Chang and Liu, 2015:252). In addition, Shohel and Power (2010) claim that MT supports the traditional lecture-style teaching, and it also promotes innovative teaching methods such as cooperative learning.

MT for the purpose of this study is defined as the use of portable devices such as smart phones, laptops, tablets, palm hand computers, and netbooks that connect to the internet to enhance student writing. Furthermore, MT for the purpose of this study includes PBL. The philosophy behind PBL is primarily

based on the idea that when the ESL students write essays in groups, their performance improves. Like any other approach for teaching and learning, MT has benefits.

2.3.3.2   *Benefits of mobile technology*

Research shows that there are numerous benefits of MT for teaching and learning. For instance, in a study on technology and language, Musa (2016:9) found that the integration of computer-assisted tools such as blogs in the ESL students' learning processes were beneficial to the students as they helped in enhancing the student's writing skills. According to Campell (2003), the blog is an online diary that is regularly updated by people using their own words, thoughts, and ideas. Thus, as the students update their thoughts and ideas on a regular basis, their writing skills improve. The researcher contends that when the ESL students engage with other students using blogs, their writing skills improve.

Research also shows that MT devices such as smartphones are beneficial in enhancing student writing. For instance, Kim and Kwon (2012) claimed that ESL smartphone apps seem effective in that they provide a personal and learner-centred learning opportunity with ''ubiquitously accessible and flexible resources and activities' (Kim & Kwon, 2012:53). Thus, smartphones are beneficial in enhancing student writing. The researcher is of the view that the smartphones are beneficial in enhancing student writing because the students can conduct research and seek information on a specific topic.

Furthermore, in a study on mobile computing, Lang et al. (2010) found that mobile devices support traditional lecture-style teaching, and they also promote innovative teaching methods such as cooperative learning (Lan, Sung, Chang, 2007; Roschelle et al., 2010) and exploratory learning outside classroom (Liu, Lin, Tsai & Paas, 2012). Thus, mobile technologies have the potential for facilitating more innovative methods. The drawback of this study is that it focused on the lecturers as facilitators of lessons in a traditional style and innovative teaching methods. This study focuses on ESL students, and it corroborates that MT coupled with PBL can enhance student writing.

In a study on the trends in mobile assisted language learning from 2000 to 2012, Duma, Orhon and Gedik (2015) found that there are benefits for m-learning for

students, which include accessibility (Godwin-Jones, 2005; Rao, 2011), accessible content (Thornton & Houser 2005), on-hand support (Kukulska-Hulme, 2009) as well as facilitating much needed interaction (Lu, 2008). In the same vein of argument, Derakhshan and Khodabakhshzadeh (2011:1152) argue that the benefit attributed to MT is their accessibility as they can be utilised 'anytime' and 'anywhere'. However, the researcher argues that the access and the use of mobile devices in the classroom should be monitored by the lecturers and the tutors as some students are likely to use them to watch pornography and any other sites which might not be education related. Like any other approach for teaching and learning, MT has weaknesses.

2.3.3.3   Weaknesses of mobile technology

Research shows that MT is not always beneficial to students. For instance, Jung (2014) highlighted some weaknesses of some of the MT devices such as small screen size, limited presentation of graphics, and the dependency on networks (Albers & Kin, 2001; Huang et al., 2012). This assertion is supported by Franklin, Myers and Yaron's (2007) claim that some challenges of mobile devices include the usability, screen size, battery life, storage, and slow downloading. Furthermore, the limited storage and memory may also limit the mobile academic activities (Huang, 2014). In the same vein of argument, Kim, and Kwon (2012) claim that there are some challenges of ESL apps on some of the smartphones, such as realising mobility as a more situated, field-dependent, and collaborative learning opportunity. They further state that the present apps facilitate personal learning, but do not effectively assist personalised learning. They also lack the knowledge –building devices such as hyperlinks, RSS, MoSoSo, CMS and other web 2.0 tools (Kim & Kwon, 2012:53).

Other weaknesses of mobile devices include students who have challenges of using the tools (Ting, 2012), physical attributes, network speed and reliability (Corbeil & Valdes-Corbeil, 2001; Park, 2011), content and software applications (Ally, 2009; Cochrane & Brateman, 2010; Deegan & Rotwell, 2010; Hussain & Adeob, 2009), as well as physical environment such as not being able to use the device outside, screen brightness and dimness as well as personal security (Shandu- Phetla, 2017:42). Students may also be distracted by multitasking on devices, and this may distract fellow students by their technology use (Bellur, Nowak & Hull, 2015; Dietz & Henrich, 2014; Ravizza, Hambrick & Fenn, 2014; Sana, Weston & Cepeda, 2013). In South

Africa, some of the drawbacks include high cost of data and load shedding issues which may continue to disrupt the students' learning experiences. Though there are some weaknesses of MT, it is relevant to this study.

2.3.3.4   *Relevance of mobile technology to this study*

This study adopted MT because the primary aim of this study is to explore the effectiveness of integrating the PBL and MT model to enhance student writing in an ESL context. MT offers many benefits such as small size, that is, they are portable; low cost in terms of data and flexibility, which are relevant in the 21st century approaches to teaching and learning. By integrating PBL and MT to enhance student writing, some challenges of academic essay writing in ESL contexts may be reduced. The literature on MT in the language classroom is reviewed below.

2.3.3.5   *Mobile technology in the language classroom*

A discussion on MT is somewhat incomplete if it is not linked to the broader concept of mobile learning. In other words, one may not separate MT in educational contexts from mobile learning, also known as *m-learning*. The two concepts are intertwined. For instance, Sherples, Tylor and Vavoula (2007) refer to *m-learning* as any learning' that takes place across multiple contexts among people through the use of interactive knowledge' (Sherples, Tylor & Vavoula, 2007:222). Thus, *m-learning* can take place in many contexts and for different purposes. The table that follows simplifies the context and the purpose for which *m-learning* can occur.

Table 2.3: Table 2.3: The context and purpose for m-learning (Adapted from Shandu-Phetla, 2017)

Purpose	Explanation
Administrative purposes	Sending notices, announcements, and reminders.
Affective purposes	Encouraging students during examination periods.
Content-delivery purposes	M-learning does not provide bits of content, but 'small components, activities or events with any mode of delivery' (Brown & Mbati, 2015:118).
Assessment purposes	MT such as mobile phones have been successfully used for assessment, such as for university entrance examinations.
Short Message Services (SMS) and Unstructured Supplementary Service Data (USSD)	Questions such as Multiple-Choice Questions (MCQs) are answered by sending the corresponding option as a response to questions. "This method does not require internet connection" (Shandu-Phetla, 2017:35).

The table above explains the role of *m-learning* in various contexts which according to the researcher is beneficial for student writing.

In the study on the factors influencing English as a foreign language teacher's adoption of mobile learning, Jung (2015:222) argued that the growing number of language teachers who are able to create mobile assisted language learning content has increased because of its demand for it, its attractiveness and the content generation tools that simplify steps with templates and functions. In other words, MALL does not only serve as a crucial source of language teaching, but it is also a support for the exploitation of language skills and retention. This assertion is supported by (Kukulska-Hulme et al., 2009) who argue that mobile technologies turn out to be well associated with student retention and achievement, by supporting the level-differentiation of learning, and reaching learners who would not have opportunities to take part in education. The researcher supports the assertion because it is through MT that students improve their academic essay writing.

In the study of the impact of m-learning on the student's learning behaviours and performance, Wang, Shen, Novak and Pan (2009) found that the use of MT in the English classroom has been successful on several levels as it promotes the students' participation in the lesson. The students change from being passive to active participants, and they also volunteer in the learning process. This assertion is supported by Fogg's (2003) claim that MT can change the students' thoughts, feelings, and actions.

In a similar context, Van Praag and Sanzez (2015) investigated MT use in the practices of three experienced second language teachers. The Focus was on the teachers' rationales, beliefs, and classroom actions on the use of mobile devices in classrooms. The findings showed that the teachers used to prohibit mobile device usage, while they recognise its potential benefits to support their teaching and student learning. In other words, the outcomes showed that the teachers acknowledged the benefits attributed to mobile technologies that they are accessible 'anytime' and 'anywhere' (Derakshan & Khodabakhshzadeh, 2011) stating that this is possible when mobile device involve applications, such as listening to podcasts, which do not require external sources. However, they did not use them. The shortcoming of this study is that it focused on the teachers only. The authors did not investigate the student's conceptions of the use of technology in the language classroom to get views from students. This is still a problem to be investigated. Another drawback of this study is that the research design (case studies whereby three teachers were interviewed and observed) narrowed the findings. If it were a questionnaire, a broader perspective on MT in the classroom would have been covered.

Previous studies reported that learning using mobile devices is not restricted to class only. Mobile devices can be used in the classroom and even outside the classroom. For instance, Raychav, Dunaway and Kobayashi (2016:142) investigated two groups of students from two different countries, Israel, and the United States on how they used mobile devices for learning outside the classroom. Yueh-Min et al. (2014) required the students to engage in collaborative activity using Google + on tablet PCs. The results showed that the Jigsaw-based collaborative learning group demonstrated more positive attitudes towards the activity than the individual learning group. Chi and Yi Lung (2014) integrated a shared display into mobile based collaborative learning. The results of the post-test showed a significant improvement in student academic

achievements. In terms of the distance learning environments, there was no clear boundary between inside and outside the classroom. The students were able to access course materials anytime either through desktop computers or through mobile devices, such as smart phones and iPads.

In addition, with regards to the results of PBL in an online classroom, the students had positive learning experiences and appreciated their interaction with their peers (Panikolaou & Boubouka, 2010). The researcher concurs with Yueh-Min et al. (2014) that learning outside the classroom encourages collaboration among the students. However, they argue that with the use of mobile devices, the learning can take place in the classroom and outside classroom. MT in ESL contexts is discussed below.

2.3.3.6   *Mobile technology in English second language contexts*
Research shows that MT can enhance the teaching and learning in the ESL contexts. For instance, in the study on the designing and implementing of mobile based training for enhancing the English vocabulary in ODL, Shandu-Phetla (2017) noted that of the mobile devices featuring in teaching and learning, the mobile phones are featuring more than the other devices. This assertion is corroborated by other researchers as well (Burston, 2014; Wu, Jim Wu, Chan, Kao, Lin & Huang, 2012). The researcher concurs with the above researchers that mobile phones are a useful tool in learning ESL but add that only if they have apps that allow the students to enhance academic essay writing.

Ham, Saltsman, Junes, Baldridge, and Perkins (2013) argued that the use of MT in education provides the educators with the opportunity to reimagine teaching and learning. This creates a more flexible learning model that gives students access to multiple information and a shift of authority based on the learning structure to a structure that is based upon the concept of the community of learners. The researcher contends that MT enables the students to be independent from the teachers. The teachers are there to give instructions and step aside for students to discover on their own with the aid of mobile devices that connect to the internet. The mobile technologies offer many benefits such as flexibility, low cost, small size, and user-friendliness (Jung, 2014:222).

In addition, in a study on the use MT in ESL contexts, Kukulska-Hulme (2013:3701) found that mobile technologies are useful for teaching as well as learning and defined

Mobile Assisted Language Learning (MALL) as 'the use of technologies in language, especially in situations where device portably offers specific advantages'. This assertion is supported by Shandu-Phetla (2017) who state that based on the definition, MALL is not merely mechanism for content delivery, but it also provides specific benefits for specific context as Duman, Orhon and Gedik (2014) point out that the MALL is a specialisation within *m-learning*, which focuses on the use of personal and portable devices in language learning.

Similarly, in a study on exploring smartphone applications for effective MALL, Kim (2012:32) found that the success of MALL depends on whether or not the MALL curriculum developers and the material developers understand the nature of mobile learning and make the most effective use of the MALL technology (Kim, 2012:32). Thus, the curriculum developers have to take into consideration the nature of mobile technologies to be used when they develop curricula. The researcher contends that the integration of MT in the English curricula can improve the students' writing. Research shows that there are various models of MT for teaching and learning. Some of them are reviewed below.

2.3.3.7   *Models of mobile technology in the teaching and learning context*

Research shows that there are various models of MT for teaching and learning and some include but are not limited to the Information System Success Model (ISSM), the Motivational Model (MM), the Social Cognitive Theory (SCT), the Technology Acceptance Model (TAM) and the Cultural Dimension Theory (CDT). The models are employed by the various instructors for various purposes for their predictive power in determining the adoptive intentions (Gan & Balakhrishnan, 2018).

In a review of the pedagogical, technological policy, the research challenges and the concepts underlying mobile learning, Khaddage *et al.* (2015) proposed a model mobile learning framework and dynamic criteria for mobile implementation with the view that most models have technological limitations and pedagogical concerns (Traxler, 2007). The framework was intended to identify the barriers that inhibit the implementation of best practices and introduces the design guidelines for proper mobile learning integration into education. In addition, the framework was designed to help to analyse as well as govern the dynamics of the factors and the challenges that were the main issues. The findings indicate that the model was not thoroughly assessed and

concluded that more research is planned to improve, extend, and test the value of the framework in practice (Khaddage *et a*l., 2015). The shortcomings of this literature were that first, the model was intended to test many things in one, hence at the end it was not assessed. Second, the literature focused on mobile learning only. This study seeks to explore how an integrated PBL, and MT model can enhance student writing.

In exploring the potentials of mobile learning in teaching academic essay writing skills for ESL students, Zakie and Yuns (2015) revealed that the potential of mobile learning in teaching and learning academic essay writing is high and that the researchers and educators can use the applications that have already existed to create new software for mobile users to further improve academic essay writing skills. Likewise, Arsaleem (2013) used electronic journaling to improve the writing skills of 30 EFL undergraduate female students in the language and translation college of Allman Mohammed Ibn Saud, at the Islamic University in Saudi Arabia. The students had to post their reflective comments to their work though their peer WhatsApp. The quasi-experimental study found that the students reacted well on the discussion and enjoyed their dialogue journaling (Arsaleem, 2013). The shortcoming of this study is that it focused on mobile learning only. This study seeks to explore the effectiveness of the two combined approaches, to find out if the two will not be useful in enhancing academic essay writing.

Musa (2016) conducted a study in which he examined the students' perceptions of blogging in some selected English as a second language writing class. The blog is one of the social networks that are found on mobile technologies, and it is designed for social interactions and is seen as a technological learning tool that is useful and has features that can enhance the learners' writing performance (Nur Ehsan et al., 2013). The findings revealed that although the blog was still new to many respondents but their perceptions of it were positive. The shortcoming of this study is that it focused on the students' perceptions, and it did not also investigate the teachers' perceptions to determine if both the students and the teachers or instructors find the blog to be useful in enhancing student writing. The study is one-sided. For this reason, it is still a problem to be investigated.

2.3.3.8 Summary

In summary, this section has reviewed some literature on MT which is regarded as a powerful tool to enhance student writing. MT is relevant in this study because it aligns to the 21st century curriculum. Moreover, the 21st century students are 'hands-on' with regards to technology. Though MT is considered to be crucial to enhance student writing, the other approaches prior to MT should not be overlooked.

2.3.4 Conclusion

This chapter presented the theory that underpins this study by providing the definitions, the benefits, the weaknesses, and its relevance to this study. Furthermore, the chapter discussed the literature on academic essay writing, PBL and MT by providing the definitions of the concepts, the benefits, and weaknesses as well as the models that are relevant to the ESL contexts. Furthermore, the underlying themes in this literature review were discussed. Lastly, the relevance of academic essay writing, PBL and MT to this study was discussed. The next chapter discusses the research methodology of this study.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The previous chapter presented the theoretical framework that underpins this study, and it reviewed the literature that is related to academic essay writing, PBL, and MT. This chapter discusses the research design, including the research paradigm, the case study, the population, the sampling techniques, and the data collection techniques that were employed in this study. Furthermore, the chapter discusses the data analysis. Lastly, there is a discussion on the trustworthiness as well as the ethical issues of this study.

The research questions are repeated in this chapter because they informed the research design.

Research Questions: Focussing on the first-year ESL students at the University of Limpopo, a contact university in South Africa, the primary research question is:

How can an integrated PBL-MT model enhance the students' academic essay writing competencies in an ESL context?

The four secondary research questions are:

1. What are the ESL students' conceptions of their academic essay writing competencies?
2. How can a model that integrates PBL and MT enhance the ESL students' writing competencies?
3. What are the ESL students' conceptions of collaborative essay writing activities using a PBL- MT model?
4. What guidelines can inform the effective use of the PBL-MT model to enhance the ESL students' academic essay writing competencies?

3.2 Research design

Creswell (2018) maintains that a research design can provide specific direction for a research study. This study adopted a qualitative and a case study research design to collect data.

3.2.1 The interpretive paradigm

Paradigms are patterns of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames, and processes through which an investigation is accomplished (Majeed, 2019). This study adopted the interpretive research paradigm which Thanh and Thanh (2015) describe as a philosophical underpinning for qualitative studies. Qualitative research makes use of a range of wide and deep-angle lense, to examine human choices and behaviours as they occur naturally in all of its details (Sherif, 2018). Interpretivism holds the premise that, to understand the world, people should be aware of the fundamental nature of the social world and the level of its subjective nature (Gunbayi, 2018:63). Moreover, interpretivism tends to align to qualitative methods such as case studies and ethnography (Willis, 2007:6).

This study adopted the 'interpretive' paradigm and the qualitative research approach to explore the effectiveness of an integrated PBL-MT model to enhance the students' academic essay writing competencies. The interpretive paradigm is relevant in this study because it assumes that reality is socially constructed (Scotland, 2012: 10). Most importantly, this qualitative study employed a case study to gather in-depth information on the researched problem. The in-depth information provided in the form of qualitative data can provide a holistic picture of the investigated phenomenon.

3.2.2 Case study

This study was conducted at the University of Limpopo in South Africa, and it employed a case study approach. Leedy and Ormorod (2015:271) posit that a case study provides an in-depth study of an individual, an event, or a program and it aligns to the interpretive paradigm because it answers humanistic 'why and how' questions (Gunbayi, 2018:64) as opposed to mechanic 'what' questions (Marshall, 1996).

A case study approach was appropriate for this study because it allowed the researcher to gather 'in-depth' information about the problem (McMillan & Schumacher, 2015:32). In addition, it offered the possibilities of an in-depth understanding of an individual situation. As this study was particularly an exploration of how an integrated project-based and MT model can enhance the students' academic essay writing competencies in the ESL context, the case study approach provided a deeper understanding of the situation at the University of Limpopo.

Like any approach, a case study has both benefits and weaknesses. The benefits of the case study approach include that, case studies can usually provide data from multiple sources (Maree, 2010), as was the case within this research study. This study explored how an integrated PBL-MT model can enhance the students' writing competencies, to that end, the multiple measures of evidence were collected and analysed (McMillan & Schumacher, 2015: 32). Carstens (2016: 32) claims that when a study uses multiple sources and techniques, the researcher gains a deeper understanding of the phenomenon and that increases the credibility of the study. This study used multiple data collection techniques such as focus group interviews, observations, and documents in the form of students' essays to gain an in-depth understanding of the investigated problem.

Conversely, the case study, just like any approach also has weaknesses. As the research focuses on a specific context, there is that risk that the research results cannot be generalised across different contexts (Creswell & Clark, 2011). Therefore, the case study has both favourable and unfavourable implications which need to be considered when undertaking research. The next section discusses the research site.

3.2.2.1 The research site

The University of Limpopo, formerly known as the College of the North, was established on 1 August 1959, before formally becoming the University of the North on 1 January 1970. The UL is one of the 26 contact universities in South Africa, and it is located in the north of the country. It was one of the former universities that were designated for blacks only before 1994. The university has an average student population of over 21 000 students per year. The majority of the students are ESL speakers, while the medium of instruction is English just like in most universities of South Africa.

The UL offers an English Studies programme which includes a module, English and African Literature in English (HENA011), that all first-year students are required to enrol for. The purpose of the HENA011 module is to teach the academic reading and writing skills that can enhance the students' academic competencies.

The number of students that were registered for the HENA011 module in the year 2020 was 687. These students have developed excellent interpersonal

communication skills (BICS) in English. However, some experience difficulties in essay writing. The researcher teaches this module and selected it specifically because research has shown that in general, the first-year students tend to encounter challenges when writing academic essays (Chokwe & Lephalala, 2012: 17) and the UL students are no exception. The researcher was concerned that this problem tended to occur year-after-year with various groups of ESL students and thus aimed to establish the reasons the students experienced these challenges. The researcher intended to highlight how an integrated project based-MT model can enhance the students' academic essay writing competencies and suggest possible guidelines for the effective use of a project based-MT model to enhance the students' essay writing competencies.

3.3   The qualitative research approach

Qualitative research uses a wide and deep-angle lens to examine human choice and behaviour as it occurs naturally in all of its detail (Johnson & Christensen, 2012: 31). In addition, qualitative research is often open-ended and can thus allow the participants to raise the issues that the researcher is unaware of (Carsten, 2016). In this study, the questions asked in the focus group interviews were open-ended and that helped the researcher to gather rich information about the investigated phenomenon.

The qualitative research design was appropriate for this study because it constituted a road map for collecting, measuring, and analysing data in this study. Moreover, the qualitative research design holds various benefits. Firstly, qualitative data lends itself to understanding the people's experiences, attitudes, and underlying values (Carstens, 2016). In this study, the participants expressed their experiences, attitudes, and values on the investigated subject. Secondly, qualitative research is often open-ended and thus allows the participants to raise the issues that the researcher might not have thought about (Carsten, 2016). In this study, the researcher gathered information on the students' feelings, opinions, and experiences of essay writing using an integrated project-based and MT model and a deeper understanding of their activities and experiences was sought (Denzin, 1989).

However, the qualitative research approach has weaknesses in the sense that it can be difficult for the researcher to identify the physical or emotional state of the

participant (Adhabi & Anozie, 2017). In addition, it requires the researcher to identify unspoken data points. This study ensured that it does not miss such kind of data to avoid incomplete and false conclusions.

This study adopted a qualitative research approach because it allows for greater flexibility that enables the researcher to construct and reconstruct meaning and bring about a deeper insight of the phenomenon (Maxwell, 2012). The data collected from the focus group interviews, the observations and the documents, enabled the researcher to gather in-depth information on the students' academic essay writing competencies before and after the training of the PBL-MT model. During the interviews, the researcher paraphrased and rephrased some of the questions for the students to provide their insights and for them to respond in detail and from various perspectives. In addition, during the group essay writing, the researcher provided the participants with the guidelines on collaborative essay writing while using their mobile phones to find information on and provide various perspectives on the essay topic. Lastly, the in-depth information that was collected through the qualitative data provided a holistic picture of the investigated phenomenon. The next section discusses the population and sampling.

3.4   Population and sampling

3.4.1   Population

Barbie and Mouton (2001) maintain that a study's population comprises of individuals or groups of people that are the main focus of the research study, and who conclusions can be drawn about. The population in this study comprised of first-year ESL students that were enrolled for the HENA011 module in the Department of Languages at the University of Limpopo in the year 2020.

3.4.2   Sampling

Leedy and Ormrod (2015) define sampling as the process of selecting sources such as people, objects, textual material, electronic records, or audio-visual material from the population where the characteristics of a subset are selected from a large group (Johnson & Christenson, 2002:197). The selected entities are, therefore called samples. Thus, a sample is a subset of the population.

This study applied purposive sampling to select the sample. Purposive sampling was appropriate for this study because the researcher targeted the first-year students that were registered for the first-level English language module known as HENA01. Therefore, the sample was selected because all the students were enrolled for the English module, and their English competencies were similar as Leedy and Ormorod (2015:183) posit that the people or other units are chosen for a particular purpose in purposive sampling.

A total of 15 first-year students who were four males and 11 females, were selected purposively to provide in-depth and rich information (Johnson & Christensen, 2012:205). The 15 students were selected to allow the researcher adequate time to conduct the focus group interviews before and after the training as well as to provide training on academic essay writing using the PBL-MT model for the 15 students who were divided into three groups and for students to write, edit and proofread their essays. This study opted for a sample of 15 students because it is a manageable number as Fossey, Harvey, Mc Dermott, and Davidson (2002: 726) argue that 'a small sample was deemed necessary to generate rich information and data that can be more manageable'. Moreover, qualitative research approaches and case studies are often concerned with gathering an in-depth understanding of a phenomenon and are focused on meaning and on the how and why of a particular issue (Dworkin, 2012).

The demographic information of the 15 sampled students is presented in Table 3.1 below. The students' demographics were essential as they helped the researcher to confirm their ESL status. Moreover, as this study employed focus group interviews as one of the data collection techniques, the researcher requested the participants to provide their demographic information to align with Dikko's (2016) argument that the knowledge of the participants' demographics can provide a deeper understanding of the context. In this study, the participants provided information on their gender, age, and home language. The students' demographics are presented in the table that follows.

Table 3.1: Demographic Information of students

Gender	Male 4	Female 11
Age	Between 17 and 21 (2)	Between 17 and 21 (5)
	22- 24 (1)	22- 24 (4)
	Over 25(1)	Over 25 (2)
Home Language	Sepedi (2)	Sepedi (4)
	Tshivenda (1)	Tshivenda (2)
	Xitsonga (1)	Xitsonga (2)
		Swati (1)
		IsiZulu (1)
		Setswana (1)

Table 3.1 above indicates that 15 first-year ESL students participated in the study. In terms of gender, four of the 15 students were male, whereas 11 were female students. Furthermore, there were two male students who were between the age of 17 and 21, one participant was between the ages of 22 and 24 while one of the four was over 25 years. On the other hand, the five female students were between 17 and 21, four were between the ages of 22 and 24, and two participants were over 25. In addition, the table shows that the younger participants had just completed high school. Although the age range of first- level students at institutions of higher learning tends to range from 17 to 21 (Lekana & Bayaga: 2018), in this study, some participants were aged 25 years and upwards and they had registered for the first-level ESL module, HENA011. In terms of the students' home languages, the Sepedi speaking students were predominant, comprising of two male students and four female students, while Tshivenda speaking students consisted of one male and two female students; the Xitsonga speaking students comprised of one male and two females, and there was only one Swati, one isiZulu and one Setswana speaking students who participated in this study.

3.5   Data collection

Data collection is a systematic process in which the researcher collects relevant information to achieve the purpose and objectives of the research study (Burns & Grove, 2005). The data collection techniques were aligned to the interpretive paradigm and included interviews and observations, which required the researcher to interact with the participants (Thahn & Thahn, 2015: 26). This study employed three data collection instruments, that is, focus group interviews, observations, and documents

in the form of students' essays. The rationale for using the three data collection tools was to obtain rich and in-depth information of the problem because multiple complimentary methods within a single paradigm complement each other (Denzin, 1978; Hussein, 2009).

3.5.1 Focus group interviews

Focus group interviews can be described as research which involves a discussion with a small group of participants, to examine how they think and feel about a particular issue that is related to research (Steward, 2018:687; Latif, 2013:1,). In this instance, the researcher leads the discussion with a small group of students, to examine how they think and feel about the research problem (Johnson & Christensen, 2012:204). One of the benefits of focus group interviews is that they are less time-consuming than one-on-one interviews, they are quick and cost effective and allow the researcher to observe the body language of the participants (Steward, 2018).

However, like any data collection tool, focus group interviews have weaknesses. Focus groups can be costly and require researchers who are skilled in dealing with group processes. In addition, bias may also be a problem (Hennink, Kaiser & Weber, 2019). According to Galdas (2017:2), 'those carrying out qualitative research are an integral part of the process and final product, and separation from this is neither possible nor desirable'. In this study, to overcome this, the researcher used the online focus group interviews because they are a quick and cost-effective way to collect qualitative data. In addition, to avoid bias the researcher made the students feel comfortable with voicing their opinions.

The focus group interviews were relevant in this research study because the researcher sought to gather in-depth information on the students' conceptions of their academic essay writing competencies in an ESL context.

3.5.1.1 Focus group interviews before the training

The focus group interviews before the training on the PBL-MT model were conducted on 18 September 2020 on a Google Meet platform because it was during the Covid-19 lockdown. The purpose for conducting focus group interviews was to gather in-depth information of the students' conceptions of their academic essay writing competencies.

Before the interviews, the researcher explained the purpose of the research. In addition, the researcher informed the students that participation is voluntary and that they were free to withdraw from participating in the research if they felt uncomfortable. Moreover, the researcher reminded the students that they would not be compensated for participating in the study. Furthermore, prior to the discussion, the researcher asked the students to provide their biographical data and even sign the consent forms that had been sent to them through emails. The researcher informed the students that their responses would be recorded and assured them that the recordings will be kept safe and will be accessed by the researcher and the supervisor only.

The researcher led a discussion with a small group of 15 first-year ESL students, who were four male and 11 females, to investigate their conceptions of their academic essay writing competencies. This study used a focus group interviews protocol and an audio recording to elicit the data. The focus group interviews protocol that was used is attached as APPENDIX E and the audio recordings which were later transcribed were kept safe on the researcher's computer. The interview protocol comprised of four sections: the students' experiences of academic essay writing, the students' attitude towards writing, the students' writing habits, and the students' understanding of the importance of academic essay writing in their studies. The questions that were asked were phrased in such a way to provide an opportunity for the students to provide information about essay writing, and they were designed to last between 60-85 minutes. Lastly, the protocol enabled the students to provide sufficient information on essay writing and that helped to answer the first research question.

Data was collected using the Google Meet platform because it was during the Covid-19 lockdown. The researcher was located at the Mankweng Township in the Limpopo Province of South Africa which is about five kilometres from the university, and the students were at their various locations, including the university residence. The major challenge that some of the students experienced was internet connectivity. However, they managed to reconnect even though that meant that the group interview session took a much longer time.

3.5.1.2   *Focus group interviews after the training*

The second focus group interviews were conducted on the 15th of October 2020 on the Google Meet platform, which was two days after the observations. The data was

collected using the focus group interview protocol as a guideline and it was audio-recorded. The protocol comprised of four sections: the students' experiences of writing group essays, the students' attitudes towards collaborative writing, the students' collaborative writing habits, and the students' understanding of how PBL-MT can enhance their essay writing competencies. The questions were phrased in such a way as to give the students the opportunity to provide information about their conceptions of essay writing using an integrated PBL-MT model. Most importantly, the second focus group interviews protocol enabled the respondents to provide sufficient information on their conceptions of essay writing using an integrated PBL-MT model, and that related to the third research question. The focus group interviews protocol that was used is attached as APPENDIX H and the audio recordings were later transcribed and were kept safe on the researcher's computer. In this instance too, some of the students experienced network connectivity. However, the challenges were minimal as compared to the first focus group interviews. The students managed to reconnect and join the interviews.

3.5.2 Observations

Bushiso (2017) posits that observation is an essential data collection technique because it gives direct information because often people do not always do what they say they do. Similarly, Cohen and Manion (2007) claim that classroom observations can provide first-hand information about the teacher's experience'. One of the benefits of observations in research is that it enables the researcher to discover the detailed information that the participants may not feel free to provide through any other means (Cohen & Manion, 2007). Thus, the observations can provide the researcher with a better 'understanding of the participants and the context within which they interact (Patton, 2002: 62).

Observations as a data collection tool are relevant in this study because the research aims at an in-depth investigation of a problem and it is of a qualitative nature (Patton, 2002:262). The challenge the researcher experienced with the observations before the training was that due to the Covid-19 lockdown restrictions, the researcher could not interact with the students in a face-to-face set up beforehand because they were under lock-up at their respective homes, and some were at the university residences. However, the researcher advised them to take the essay writing activity seriously and

submit their essays. The students submitted their essays on the 23rd of September 2020 through emails. The observations after the training were conducted on the 13th of October 2020 in a lecture hall. Before the observations commenced, the researcher conducted a training workshop where the integrated PBL-MT model was explained and practised. The details of the training are provided in Chapter 4 of this study. An observation checklist was used as a guideline in the classroom observations. The observation checklist is attached as APPENDIX G, and it enabled the researcher to observe and collect the rich data that the participants may not have felt free to provide through any other means (Cohen & Manion, 2007). It should be noted that the observations and the group essay writing were conducted concurrently. In other words, the researcher observed the three groups of students while they were writing their group essays. The students were divided into three groups of five, Group A, Group B and Group C.

The researcher and the students met on the 13th of October 2020 at 10:00am in a seminar hall. The hall was fumigated, and the students had their masks on as it was during the Covid-19 pandemic. On arrival, the students were asked to keep their masks on, to sanitise their hands, and to keep to the social distancing protocols. The task was explained to the three groups of five students, and they were requested to decide on a descriptive essay topic and write an essay of about one and half to two pages long. The observations of each group are discussed below.

Group A observation of essay writing

> *The students were observed assigning one another roles before starting with the actual writing. The students agreed on the topic for the essay. One was observed taking the role of a scribe, and the rest were observed taking turns and searching for information on their cell phones. The researcher observed that all the participants in the group, including the scribe, brought their cell phones to the lecture hall and they were observed using them to search for information. Another observation was that one participant had brought an Oxford Learners Dictionary. However, the participant never opened it. Often the students were seen using their cell phones to search for information. Furthermore, the researcher observed that the students communicated with each other, and they were seen discussing, arguing, and listening to each other.*

They also used non-verbal gestures such as the nodding of the head, eye contact, and facial expressions to communicate. This group managed to work on and complete writing the essay within the two hours that were allocated to them. The essays were collected for marking.

Group B observation of essay writing.

The students were observed assigning one another roles before starting with the actual writing. One of the participants was a scriber, and the other participants listened and told the scriber to start writing as they continued with their discussions. This group took time to reach a consensus about the topic. This was observed as the scriber continued writing. However, when they started with the actual writing of the essay, they became fast. The participants were observed interacting among themselves using non-verbal communication skills such as the wagging of fingers, facial expressions, the nodding of the head, and voice projection. Furthermore, the participants were observed taking turns and were heard from a distance as they were exchanging ideas. They used their cell phones frequently, listened attentively to each other and took time to discuss and write down their thoughts after agreeing on an issue. The participants used their cell phones to search for the meaning of some words and even searched for information related to the topic, except for two students who seemed to have been distracted by their cell phones. The two participants were seen using cell phones throughout the discussions, even when the others focused on sharing ideas and the writing of the essay. The group did not finish on time, and they were given an extra ten minutes to complete their work.

Group C observation of essay writing

The students were observed assigning one another roles before starting with the actual writing. The researcher observed that all the students had brought their mobile phones. However, one student was observed not using the cell phone as the others. The students were observed taking turns. Most of the time, the group was observed taking a lot of time to reach an agreement. One student was not focused on the task like the rest of the participants. During the discussion, the participants used gestures

such as the nodding of heads to show agreement, the others used fingers to point at information on the mobile phones. The group completed the project on time.

3.5.3 Documents

The documents in research may include, inter alia: the policies, acts, written essays, public records, textbooks, letters, films, tape diaries, themes, and reports (Neuman, 2006:323). In this study, the documents comprised of the students' academic essays, both the individual and the group essays. Essay writing is considered as a Classroom-Based Assessment (CBA) that the teachers use to help the learners to achieve learning objectives (Purnamasari, 2018). One of the benefits of documents is their relatively low cost. The documents are used as data collection tools in research studies as they are relatively more affordable than, for instance, a comprehensive survey (Monette et al., 1994:204. However, the documents also have weaknesses. For instance, in some studies the researchers are dependent on the ability of the respondents to write and formulate documents clearly and meaningfully (Bailey, 1994:296-298).

In this study, it was important to collect data from documents, that is, students' essays to determine how students write and approach the task of writing academic essays individually and in a group.

3.5.3.1 *Documents: Individual essays (collected before the PBL-MT training session)*

The students submitted their individual essays on the 23rd of September 2020 through email. A total of 15 students wrote essays of about one and a half to two pages, estimated at 250 words on the topic: '*The impact of the Corona-Virus outbreak on teaching and learning at universities*'. The rationale for providing the students with such a topic was to establish if the students can write about issues that affect their studies. Besides, sometimes the students find it difficult to come up with suitable essay topics, if they are not provided with one. The researcher provided the students with the basic guidelines on how to write an essay. However, that was done as part of the day-to-day classroom practice because the primary purpose of essay writing was to validate the data in the focus group interviews and to establish if the students could write 'good' essays individually. At this stage, the students wrote essays without having access to other study materials such as books, notes, and technology devices

to enhance their essays. The standard essay writing skills as identified in the essay rubric were used to assess the essays. Each criterion was allocated four scores totalling 32 scores. Although this study adopted the qualitative research method, the students' scores are presented in numbers and as Chivanga (2017) posits the use of numbers in qualitative research does not matter; what matters is how and where the numbers are used. While the study presented the students' scores in numbers, it follows a qualitative research methodology.

3.5.3.2   *Documents: Group essays collected after the training session*

The students' group essays were written and collected on the 13th of October 2020. The students submitted the essays to the researcher because they wrote the group essays in a lecture hall. Like the first batch of individual essays, the group essays were marked using a rubric which is attached as APPENDIX F.

The students' individual and group essays were collected and marked using the essay marking rubric, which is attached as APPENDIX F at the end of this study. Though this study adopted the qualitative research method, the students' scores are presented in numbers, but as Chivanga (2017) posits in some instances, including in this study, the use of numbers in qualitative research is relevant because what matters is how and where the numbers are used. The table that follows provides a summary of the data collection under each research question.

Table 3.2: Summary of data collection under each research question

Research Question (RQ)	RQ1	RQ2	RQ3
Data Collection Tools	FGDs	Documents and Observations	FGD
The Phases	Phase 1 Before the training FGD interviews held with students; Students wrote individual essays at home or at university residences and submitted them. (Documents: Individual essays)	Phase 2 and 3 Students trained on the integrated PBL-MT model; Observations of the three groups of students writing essays in one of the university halls, made. Students wrote group essays (Documents: group essays	Phase 4 FGD interviews held with students

Table 3.2 above summarises the data collection process, which comprised of focus group interviews, observations, and documents (student essays). The next section discusses data analysis.

3.6   Data analysis

In this study, the qualitative data that was gathered through the focus group interviews, observations, and the documents was analysed thematically. According to Braun and Clarke (2013), the thematic analysis is a method of identifying and interpreting patterns of meaning across qualitative data. This study adopted Braun and Clarke's (2013) model of data analysis. The data analysis procedure is discussed hereunder.

3.6.1 Data analysis procedure

The data was gathered from the two focus group interviews, the documents, and the observations were analysed as follows:

a) Familiarisation: In becoming familiar with the data, the researcher took time to read the transcribed data that was gathered through the focus group interviews, the observations and the document. Reading through the data, the researcher made initial notes to familiarise with the data. Most importantly, the researcher made notes while at the same time checking the objectives of the study because Braun and Clarke (2006) caution the users of the model against the discrepancies and the inaccuracies that could transpire between the audio recordings and the transcriptions. In this study, the researcher ensured that the transcriptions are accurate.

b) Coding: After a thorough reading of the data, the researcher formulated some codes. Coding refers to identifying all the relevant pieces of data within the entire data set to answer the research question (Shandu-Phetla, 2017). In formulating the codes, the researcher used different colours to highlight the phrases and the sentences and gave them the codes as recommended by Caulfield (2020). In addition, to be thorough, the researcher ensured that the various phases and sentences correspond to different codes. This was done to gain an overview of the main points and common meaning throughout the data (Braun & Clarke, 2013).

c) Generating themes: During this phase, the researcher identified several codes and combined some of them into various themes. The codes which were too vague orthose that were not relevant were revised.

d) Reviewing themes: During this phase, the researcher reviewed the themes by reducing and merging similar themes. Most importantly, the researcher made sure that the themes that were created represented the data.

e) Defining and naming themes: In the next phase, the researcher refined, reduced, and named the themes. The initial themes that did not articulate the research objectives of the study were revised, because Braun and Clarke (2006:92) maintain that each theme tells a 'story', and it is essential to consider how it fits into the overall 'story' that one is telling. The researcher ensured that each theme told a story and fitted in the broader narrative towards understanding the students' conceptions of academic essay writing competencies and the collaborative writing activities using PBL-MT model.

f) Writing up: According to Braun and Clarke (2008), producing the report is the final stage of the analysis. At this stage, the researcher writes up the story as told by the data through the themes, in relation to the research questions. They further posit that the task at this stage is to tell a 'story' in a way that convinces the reader of the merit of analysis (Braun & Clarke, 2008:93). In this study, the researcher presented the themes that emanated from the data.

It is worth noting that the analysis process was not a once-off event, as it was iterative and continued from the initial coding stages to the final reporting stage where the researcher defined, redefined, and refined the themes throughout. Most importantly, the transcribed data was stored on a Microsoft word document on the researcher's computer.

Like any other model, the thematic content analysis has weaknesses. Among several others, Lawless and Chen (2019) avar, among other things, that the thematic analysis at this stage lacks a critical framework: 'Though useful, we suspect that Braun and Clarke's (2006) method is limited in its critical specificity in connecting everyday discourses with larger social and cultural practices nested in unequal power relations" (Lawless & Chen, 2019:93). Moreover, 'thematic content analysis has limited interpretive power beyond mere description, if it is not used within an existing

theoretical framework that anchors the analytic claims that are made' (Braun & Clarke, 2008:99). The trustworthiness of the study is discussed below.

3.7   Trustworthiness

Anney (2014:275) defines the trustworthiness of the study as the degree to which the people can depend on and trust in the given research findings, and identifies credibility, transferability, and confirmability as some of the key elements. To establish trustworthiness, this study ensured that the findings are credible, transferable, and confirmable as discussed below.

3.7.1 Credibility

To establish credibility, the researcher ensured the use of specific procedures such as the data collection and data analysis methods are derived from the previous studies which had successfully made use of these methods (Shenton, 2004:63). Furthermore, credibility was attained throughout the study by ensuring that the findings were obtained through the data collection process and were analysed thematically as recommended by Braun and Clarke (2013).

3.7.2 Transferability

Transferability means comparing previous studies with the current study to establish similarities (Leedy & Ormrod, 2014; Seale, 1999: 45). The results of this study only apply to this research study, its context, and this university, and may not be applied to other universities in other contexts but may serve only as a guide in similar projects.

3.7.3 Confirmability

Makweya and Oluwatayo (2016:13) suggest that, to ensure confirmability, the researcher should take steps to demonstrate the results that arise from the collected data and not their own "predisposition". Therefore, in this study, the researcher remained unbiased and ensured neutrality throughout the research. Furthermore, the researcher provided explanations on why specific methods and approaches were selected and employed in this study.

3.8   Ethical considerations

Permission to conduct research was sought from the UNISA College of Human Science Research Ethics Committee (NCHREC) before commencing with the research. The ethical clearance letter is attached as Appendix C. In addition, the

researcher sought permission to conduct the research from the Head of Department (HoD) in the Department of Languages, School of Languages and Communication Studies in the Faculty of Humanities at the University of Limpopo. The researcher further requested the participants, that is, the first-year ESL students that were registered for the HENA011 Module to participate in the research. The students were asked to complete and sign a consent form and were informed that participation is voluntary, and that there will be no incentives for taking part in the research. Moreover, the students were informed that anonymity and confidentiality will be maintained. The data in this study is confidential, and only the person who helped to transcribe the focus group interviews, the promoter and the researcher had access to the data. The study adhered to the required ethical considerations for research.

3.9   Conclusion

This chapter outlined the research design and the methodology that was employed in this study. The data collection techniques were described. The reasons for employing a case study as well as the details about the population and sampling were also described, followed by the procedure for data collection and data analysis. Lastly, the trustworthiness of the research and the ethical considerations were presented. The next chapter continues with the discussion of the methodology, and it presents the PBL-MT training.

CHAPTER 4:   TRAINING ON THE PBL-MT MODEL

4.1   Introduction

The previous chapter presented the research design and the research methodology that were employed in this study. This chapter builds on the previous chapter, and it focuses on the training of the PBL-MT model. It discusses and provides a summary of the training.

4.2   Training

A training is the process through which skills are developed, information is provided, and the attitudes are nurtured to help the individuals to become more efficient in doing their work (Kekana, 2015; Davis & Davis, 1998:40-54). In this study, the training on academic essay writing comprising of the integrated PBL-MT model incorporated the seven steps of PBL (Titivesa, 2014) and the five stages of the writing process approach (Laksmi, 2006:146) as discussed in Chapter 2.

Like any programme, training has both benefits and weaknesses. One of the benefits of instructor-led training, which is relevant to this study, is that it is a valuable program as it provides a more face-to face experience to students as compared to the other methods such as the computer-based training. However, one of the weaknesses of such a training is that it is not always interactive, and the success of the training hinges on the expertise and the experiences of the instructor (Wormley, 2015).

The training of academic essay writing using the writing process approach and the PBL- MT model was essential because the students had very little or no knowledge of the model. More importantly, the training provided the students with an opportunity to learn about an alternate model that can be used to enhance their essay writing competencies, and which could hopefully help them to develop a more positive attitude towards essay writing (Rahmania, 2021).

A total of 15 students, who were four males, and 11 female students attended the training that was led by the researcher. The training took place on the 13th of October 2020 from 10:00 to 12:00 in the morning, in a lecture hall at the University of Limpopo. Before the actual training, the trainer, explained the purpose of the training. Furthermore, the trainer divided the students into three groups of five each, and each group chose a scriber, and they were provided with task sheets for them to write their

essay drafts and any information they found relevant during the training. The groups were labelled Group A, Group B and Group C.

4.3   The training procedure

The researcher informed the students that after the training they were expected to implement what they would have learnt during the training. The rationale for informing them about the training output was to alert them to take the training seriously. The training was about essay writing using an integrated PBL-MT model that also encapsulated the writing process approach that was adapted from Lakmi (2006:146). The rationale for using the writing process approach and the PBL steps was that both have common characteristics and place more emphasis on the writing process. The stages of the training are discussed below.

4.3.1 Stage 1: The Pre-writing stage

In the pre-writing stage, which takes about 85% of the writer's time (Laksmi, 2006:146), the writer focuses on the subject of his writing and the audience before starting with the essay writing. It is worth noting that in each stage of the training, the trainer's role was to instruct and demonstrate to the trainees the procedures to be followed and the students listened, wrote notes, and wrote essay drafts. The pre-writing stage correlates with the five PBL steps (Laksmi, 2006:146), that is, choosing a topic, gathering ideas, organising ideas, defining a topic sentence, and outlining the first stage as discussed below.

a) Choosing a topic: The trainer asked the students to choose topics based on their own experiences. Laksmi (2006:147) posits that, the more students are interested in their own topic, the more communicative language ability increases, because they choose the topic they know. In this study, the trainer instructed the students to think of essay topics that are relevant to their level. Allowing the trainees to choose their topics assisted them in developing their confidence about what they were to write down. Unlike when they were writing essays individually, the trainees decided on essay topics in their groups. In addition, the trainer advised the students that when they choose academic essay topics, they should consider the possible readers of the essays. At this stage, the students were advised to use their mobile phones to search for possible topics, the concepts and other key aspects that may help to develop their

essay topics. Most importantly, the students were advised to start discussing the essay topics in the group, and to share information while ultimately trying to agree on one topic. Working as a group and using mobile technologies helped the trainees to decide on their essay topics because they searched for and shared the relevant and useful information, they found on the relevant websites using their mobile phones.

b) Gathering ideas: Some students had difficulties gathering ideas for their writing. Therefore, the trainer discussed some of the different techniques for gathering ideas such as brainstorming, reading, and interviewing (Lakismi, 2006:145) with each group of students. With brainstorming, the trainer advised the trainees to use diagrams or illustrations and to jot down as well as to list their ideas for their essay. The participants were asked to decide on the type of essay they wanted to opt for. They also had to keep the purpose for the essay and the possible readers in mind. The students used their mobile technologies to seek detailed information and to read on the topics of their choice. Liebensperger (2003:2) maintains that reading may be helpful for the ESL students when they are unfamiliar with the topic. Similarly, Lephalala (2014:7) claims that reading is an active process that is akin to problem-solving. The students continued to gather additional information as they tried to convince the group why their chosen essay topics were more reliable.

c) Organising ideas: The trainer advised the trainees to write down their ideas and refine them. First, they went through their ideas and crossed out irrelevant information or information that they thought was not aligned to the topic, but they did not erase it completely as they might use it at a later stage. Secondly, each group rearranged the ideas they had jotted down, and grouped the most closely related ideas, but, at this stage, they did not worry about the order of ideas. Lastly, they looked critically at the ideas that they had categorised into groups to identify the ideas that lacked sufficient supporting information and searched they for more information on their mobile phones (Cameron, 2009:2).

d) Defining a topic sentence: The students were requested to write the possible topic sentences for each paragraph. The trainer emphasised the importance of topic sentences in an academic essay and how the topic sentence aligned to the various paragraphs and the body of the essay. Thus, the participants were reminded that, the

topic sentence unifies the contents of a paragraph, and it can help the writer to organise the main ideas of the essay by creating unity in each of the paragraphs. The trainees were able to identify the possible topic sentences and they highlighted them.

e) Outlining: The trainer instructed the trainees to start writing an outline of their essays. Thereafter, they were asked to use their phones to seek more information on the topic and the outlines.

4.3.2 Stage 2: Drafting

At this stage, the trainees wrote rough drafts of their academic essays in groups. According to Laksmi (2006), at this stage the participants negotiate their choices of the final draft of the project. Stage 2 of the writing process approach integrates with step 3 of PBL in which the students determine the content and the structure of the project. Most importantly, the trainees used the mobile technologies to search for additional information to enhance their drafts. Emphasis was on the content rather than the mechanics. As stated earlier, the trainees listened to the trainer's instructions, explanations and demonstrations and implemented them in their writing.

4.3.3 Stage 3: Revising

At this stage, the trainees revised their drafts. Each group discussed their writing among themselves and with the trainer. The trainees agreed on the scope of information collection and on a tentative framework (Thitivesa, 2014). In addition, the trainees participated constructively in discussions about their writing, and were advised to make changes in their drafts to reflect the feedback and the comments from the trainer. Most importantly, they were advised to use their mobile phones to seek additional information where it was required.

4.3.4 Stage 4: Editing

The editing stage comes after the revision stage. In this stage, the trainees worked on the drafts to make their essays 'optimally readable' (Laksmi, 2006:153). In the training, each group of trainees proofread their own writing. Moreover, they corrected their mechanical errors such as grammar, spelling, capitalisation, and punctuation, using their MT devices. The trainer provided them with a checklist which they used as a guideline as they edited their essays. This stage correlates with Step 6 of PBL which brings students back to the classroom and lets them sort out the gathered information,

as well as analyse and organise it for the write up. Throughout the training, the trainees were at liberty to use their mobile phones to search for more information and to enhance their essays.

4.3.5 Stage 5: Publishing

At this stage, the trainees made final copies of their drafts and handed them to the trainer. According to Laksmi (2006), at this stage, the students submit to the teacher their essay drafts based on the agreement in Step 2. Most importantly, the students reworked their writing until their intended message was clearly communicated. The final stage of the training in both the writing process approach and PBL is to create a product or solution. Often the assessment in the context of this study, the academic essay was based on the completion of the final steps or stages.

4.4   Summary

In summary, the training on academic essay writing using the writing process approach and the PBL- MT model was critical in this study. The students gained knowledge of how to solve the problem in the form of essay writing and ultimately wrote group essays at the same time. The process is summarised in the table that follows.

Table 4.1: The stages of the PBL-MT Model

Stages	The writing process approach	PBLI
Stage 1	1 Pre-Writing	Step 1, 2, 3,
Stage 2	2 Drafting	Step 3,
Stage 3	3 Revising	Step 4,5
Stage 4	4 Editing	Step 6
Stage 5	5 Publishing	Step 7

4.5   Conclusion

This chapter presented the training of the PBL-MT model, which combined the stages of the writing process approach and the steps of PBL-MT. Though the writing process approach was considered relevant to employ in the training of essay writing using the PBL-MT model, the other writing approaches should not be overlooked. The next chapter presents the research findings.

CHAPTER 5:   PRESENTATION OF THE FINDINGS

5.1   Introduction

The previous two chapters discussed the methodology including the training the students received on the PBL and MT processes. The current chapter presents the findings under each research question. A summary of the findings is also provided. The research questions are presented below.

The primary research question: How can an integrated PBL-MT model enhance the students' academic essay writing competencies in an ESL context?

The four secondary research questions are:

1. What are the ESL students' conceptions of their academic essay writing competencies?
2. How can a model that integrates PBL and MT enhance the ESL students' writing competencies?
3. What are the ESL students' conceptions of collaborative essay writing activities using a PBL- MT model?
4. What guidelines can inform the effective use of the PBL-MT model to enhance the ESL students' academic essay writing competencies?

5.2   Research findings: Discussion

The research findings are presented in line with the research questions.

5.2.1   Research question 1: What are the ESL students' conceptions of their academic essay writing competencies?

The discussion of the findings is presented in four sections: the students' experiences of academic essay writing, the students' attitude towards writing, the students' writing habits, and the students' understanding of the importance of academic essay writing in their studies.

5.2.1.1   Students' experiences of academic essay writing

The students' experiences of academic essay writing are addressed in four subsections: their knowledge of academic essay writing, what they liked about academic essay writing, what they disliked about academic essay writing and how the lecturers guided their writing.

Firstly, on their knowledge of academic essay writing, the findings indicate that the students regarded writing in terms of content, structure, and function. Some of them viewed academic essay writing as "expressing one's ideas", or "providing details of the topic", or "… expressing one's thoughts". Some of the verbatim responses are presented below.

> **Group 1-Respondent 1:**
>
> *"Academic essay writing is creative writing or is about expressing one's ideas about the given topic".*
>
> **Group 1- Respondent 3,5:**
>
> *"Academic essay writing is a form, I would say… of expressing yourself through the use of words and writing in paragraphs".*
>
> **Group 2- Respondent 4,5:**
>
> *" When I write an academic, I explain or give the details of the topic".*
>
> **Group 3- Respondent 3, 5:**
>
> *"Uh… academic essay writing, can say is about creating a story-like or I can say imagining about a topic given as a task".*

Some students viewed academic essay writing in terms of the structure of an essay. For example, they regarded academic essay writing as consisting of three sections, the introduction, the body, and the conclusion. Other students regarded academic essay writing as writing that is in paragraphs, as shown in the verbatim responses presented below.

> **Group 1- Respondent 2**
>
> *"In academic essay writing, we have an introduction, conclusion and body".*
>
> **Group 3- Respondent 1, 4**

"Uhm… I can say academic essay writing is a piece of writing in which one write about a particular topic, or a topic one can think of".

Group 1- Respondent 4

"Uhm…academic essay writing is summarising works of writers themselves. It includes the introduction, body, and conclusion".

Still, the other students viewed academic essay writing in terms of its function. For example, they regarded academic essay writing as a formal piece of writing which is planned and can be written in paragraphs. Some of the verbatim responses are presented below.

Group 1- Respondent 3,5

"Academic essay writing is a form, I would say… of expressing yourself through the use of words and writing in paragraphs".

Group 2- Respondent 1

"I think academic essay writing is a short formal piece of writing in which you write about a topic given or own topic".

Group 3-Respondent 2

"I know academic essay writing as creative writing which is planned and is written in paragraphs".

Secondly, in response to the sub-question question, "*what do you enjoy most about academic essay writing and why,*" the findings show that the students enjoyed academic essay writing because it allowed them to think about their writing, and it also enabled them to organise their writing and to be creative. The verbatim responses are presented below.

Group 1-Respondents 1, 2, 3, 4; Group 2- Respondents 1, 3, 4; Group 3-Respondents 1, 5

"It is different from speaking, like academic essay writing it gives me a chance to articulate myself in writing".

Group 2- Respondent 2

"Only I like collecting information or collecting data and then using my creativity to put it together into a constructive piece of writing".

Group 2- Respondent 5

"Um, I like to write about difficult topics 'cause they force me to think hard".

Group 3- Respondent 2

"Um, I like writing, like creating a story out of the topic I will be writing about".

Group1- Respondent 5

"Eh…I like drawing a mind map so I can write the points in short and write them, I mean the points in paragraphs".

Group 3- Respondent 3

"I like brainstorming ideas before I write them as paragraphs, arranging them according to paragraphs".

Group 3- Respondent 1 and 4

"For me, eh I like a mind map so that I can write points down in a short way before I write them in a sentence then paragraph".

Thirdly, in response to the question, "*what do you dislike about academic essay writing and why?"* the findings show that the students disliked academic essay writing because they found that the topics were difficult, and the instructions were limiting and restricting. For instance, they referred to academic essay writing as a "challenge," "a struggle", "not knowing how to arrange the facts," and "having to arrange ideas in a manner acceptable to my teacher". The verbatim responses are presented below.

Group 1-Respondents 3, 4

"I don't like it when I have to write about a topic challenging to me, cause, like I know I will not produce anything".

Group 2- Respondents 3

"Uh, if the topic is difficult or I struggle to put facts together, that's why I don't. I don't like that part".

Group 3- Respondents 1, 2, 3, 4, 5.

"I don't like it when I don't understand the topic, because I know myself, I will not arrive to number of words required in academic essay writing".

Some students indicated that they do not like writing long academic essays. Interestingly, some students do not like to be limited when they express their thoughts in writing, while others reported that they do not like to write lengthy essays. The verbatim responses are presented below.

Group 1- Respondent 1

"Eish, the length. Now, as a student, they give you a certain length that you must reach; I do not like length when I express my feeling, I don't like cutting my feeling, I just like going on and on".

Group 2- Respondent 1, 4

"Uh, what I dislike about academic essay writing is that we are often given a sort of a word count, or a limit, so sometimes it tends to be difficult to express about the topic. You are not well informed about. To an expected or maybe a greater extent".

The other students indicated that they disliked writing on difficult essay topics. Words such as "difficult," "challenging" and "think hard" were used by the students. The verbatim responses are presented below.

Group 1-Participant 4

"I If I don't have facts or should I say points to write about, I become bored, and just write for sake of writing".

Group 2- Participant 4

"I don't like writing "cause it makes me think. Worse part is when I have to organise thought in paragraphs".

Group 3-Participant 4

"Sometimes I hate writing cause it, eh, take my time especially if tithe is difficult".

Fourthly, for the sub-question, "w*hat guidance did you get from your lecturer regarding academic essay writing?"* the responses show that while some students indicated that they were taught how to structure and organise their essays, others were not certain, and their responses were hesitant. Some of the verbatim responses are presented below.

Group 1- Respondent 4

"For me, eh, I can say planning, well I was advised to brainstorm the topic, put my ideas on mind map and arrange them before I begin with my actual writing of draft".

Group 2- Respondent 1

"Uh… I was advised to plan academics before writing, maybe using a mind-map and maybe using the title's key points or the topic. To get a direction of how I'm going to write".

Group 3- Respondent 1 and 4

"My lecturer taught me to begin, a mind map. Then write a draft. Edit it and then write the final draft".

Group 1- Respondent 5

Uh.. I'm not sure… but our English lecturer once told us to start with draft. Eish, but I'm not sure it she was referring to all assays we write or not".

Group 3-Respondent 5

I don't remember being given guidance or let me say I don't know about that".

5.2.1.2 Students' attitudes towards essay writing

The students' attitudes towards essay writing are addressed in three subsections: their confidence in writing essays individually, how they feel when lecturers instruct them to write essays, and how their motivation is affected when writing an essay on a topic they do not understand.

Firstly, in response to the sub-question, "*do you have the confidence to write an academic essay individually and why?"* the students' responses varied. Some indicated that they preferred writing individually, while others preferred writing in groups. The students who preferred writing individually indicated that they did not want to deal with arguing with peers about whether their ideas or perspectives were appropriate or whether they made sense and found writing essays in groups time-consuming because they had to first engage with, listen to, argue with, and come to a consensus with other students in the group before they can start with the essay writing. The students who preferred working in groups indicated that the groups forced them to think deeply about a topic and it exposed them to range the perspectives on a topic

and that gave them confidence and stimulated their thinking. Still others were comfortable with both individual and group writing. The verbatim responses are presented below.

Group 1-Respondent 1

"I have confidence of writing it. If I am alone, I can put my ideas where I want. If in a group, there may be many ideas and these ideas sometimes clash".

Group 1-Respondent P4

I do like it, because is where I get to express myself, with other people, with other people you have to relate to what write about. If you do it individually, is your talk".

Group - Respondent P5

Yes, I have confidence, 'cause I like expressing myself in writing. I believe that if we are many writing about one thing we will not finish quickly".

Group1- Respondent P2

"I do because, I'm a writer, a script writer. I am a poet so I have confidence in writing and do also have confidence in writing in groups, I believe in learning from others".

Group 1- Respondent 1

"No. My answer is no, because sometimes you can run out of ideas, especially on the topic that".

Group 2- Respondent 2

"For me, I think I don't have the confidence to write individually. I still need a bit of help because I haven't mastered how to create structures and planning maybe unfamiliar things, or I don't know much about".

Group 2- Respondent 4

"Writing things alone sometimes is a challenge, so with me if is about the type of essay I know, I have confidence, but if not, eish, I don't have".

Group 3-Respondent 3

"No. I sometimes doubt what I write especially if the topic is difficult".

Secondly, in response to the question, *"how do you feel when the lecturer instructs you to write an academic essay?",* some students indicated that they were comfortable with writing an academic essay and found it exciting and beneficial. Others found essay writing challenging while others found it both exciting and difficult. The verbatim responses are presented below:

Group 1- Respondent 1

"It is exciting because I love writing but at the same, it makes me feel uneasy because I do not know if the essay is going to be about what I know".

Group 1- Respondent 4

"I feel good, because I believe that writing essays is one way of learning".

Group 2- Respondent 1

"Uhm, I can say that I feel good about it as there is no specifications or specific answers that are required of me so. When you are given an opportunity to. You are actually given an opportunity to try an attempt to express the little that you may know about the topic with no specifications".

Group 2- Respondent 2

"An enlightened. I also feel like I will. I'm given the opportunity to express myself on a certain topic and be creative in doing so".

Group 2- Respondent 4 and Respondent 5

"If the lecturer gives us is a topic that I understand I write with confidence"

"I feel good if the essay topic is not difficult".

Group 3- Respondent 4

"I like be given work, so I like it. I don't have problem being taken by surprise; I adjust quickly".

Group 2- Respondent 1

"Uhm, I can say that I feel good to write about anything at any time, I mean as long as there are no specifications or specific answers that are required of me

so when you are given an opportunity to. You are allowed to try an attempt to express the little that you may know about the topic with no specifications".

Group 3-Respondent

"Eh, if a lecturer takes us by surprise, like he just come to class and tell us to write now, is another story. I will struggle to put facts together. I like to be given assays as homework, like assignments they give".

Group 3 Respondent 5

"I don't feel great, I would say if the lecturer give us a difficult topic and as short space of time to write about the topic, but if the topic is easy, then, I don't have problem".

Thirdly, in response to the question*, "how is your motivation affected when you are required to write an academic essay on a topic you do not understand?."* The students indicated that they become less motivated, are demoralised, and become more anxious if the essay topics are difficult. The verbatim responses are presented below.

Group 1- Respondent 1

"It is exciting because I love writing but at the same, it makes me feel uneasy because I do not know if the essay topic is going to be about what I know".

Group 1- Respondent 5

"Uhm, I feel nervous if I don't understand the title, but if is about something that I know, I feel great".

Group 3- Respondent 5

"I don't feel great, I would say if the lecturer give us a difficult topic and as short space of time to write about the topic, but if the topic is easy, then, I don't have a problem".

5.2.1.3   *Students' writing habits*

The students' writing habits are addressed in four sub-questions: how they plan their essays, whether they organise ideas and how it helps in writing their essays, the aspects of essay writing they think are important and whether they edit drafts and why. Firstly, in response to the question, *"do you plan your academic essay and how?"*

some students confirmed that they do plan their essays, for example they structured the essays in sections comprising of an introduction, the body, and the conclusion, as shown in the response below.

Group 3- Respondent 2

"Yes, I plan my academic essay like I write introduction, body, and conclusion".

Secondly, in response to the sub-question, "*do you organise your ideas, and how does this help you to write your essays?"* the students confirmed that before writing essays they organised their ideas to make it easy for the reader to follow their thoughts. For example, one student confirmed that, *"arranging ideas is one of the steps of academic essay writing. You cannot just submit the essays that is not well organised".* The verbatim responses are presented below.

Group 1- Respondent 3

"Yes, organising ideas is one of the most important keys of academic essay writing. I mean if you don't arrange ideas in a more sensible way, the reader will be confused as he/she read the essay".

Group 2- Respondent 4

"Yes, I organise to avoid confusing the teacher or anyone who can read my academic".

Group 3- Respondent 1

"Yes, I organise my ideas and then it helps me to not mix up the concepts when I write, so I write in and, in a sensible manner, we will buy ideas are not mixed up. Or concepts are not mixed up".

Group 3- Respondent 5

"I arrange ideas, usually I group ideas for introduction together, ideas for body and ideas for conclusion and so on".

Thirdly, the students' responses to the sub-question, **"***which aspects of academic essay writing do you think are important and why?"* shows that the students understood that the essays should be structured, as presented in the verbatim responses below.

Group 1- Respondent 1

"*The first thing to know is what you are writing about; If you know what you are writing about, you will be able to write an interesting introduction which is very important in academic essay writing".*

Group 1- Respondent 5

"*The introduction is the leading part of the essay because it connects to the topic…then followed by the body that explain everything, Lastly is the conclusion".*

Group 3- Respondent 3

"I think the introduction is the leading paragraph because it tells us more about the topic".

Group 3- Respondent 5

"Think introduction is very important cause it introduces the topic".

Fourthly, in response to the sub-question, "d*o you often edit your* draft essays *and why?" the* students indicated the importance of editing their essays before submitting the final essay, as presented in the verbatim responses below.

Group 1- Respondent 1

"Yes, I do edit my draft. As a writer, you find that In your essay there are minor mistakes that you were not aware of, so editing your essay helps in recognising such mistakes then you will edit."

Group 2- Respondent 2

"Uh …I edit my essays because I'm trying to improve on my writing of the essay so I can have a final draft that makes sense".

Group 2- Respondent 5

"Uh… Yes, I edit. The reason for that is that I want to submit an error-free essay".

Group 3- Respondent 4

""Yes, after writing the first draft, I edit to check spelling, punctuations like capital letters, period and so on. Again, I check sentences if thy constructed well".

5.2.1.4   Students' understanding of the importance of academic essay writing in their studies

The students' conceptions of the importance of academic essay writing in their studies is addressed in two sub-sections: are the writing activities linked to the study skills (summarise, note-taking, concept/mind map), and do the lecturers illustration of the value of writing activities. If so, how is it done?". Firstly, in response to the sub-question, "how are the writing activities linked to the study skills process, that is, summarising, note-taking, and the concept/mind mapping**,** the responses show that the students are aware that academic essay writing is valuable, and it is a key aspect of their essay writing. Whereas some students indicated that they did not regard academic essay writing as a valuable aspect in their studies, the findings show some conflicting responses as some students indicated that some lecturers emphasised the importance of academic essay writing, whereas the other students responded negatively to the same question. The verbatim responses are presented below.

Group 1- Respondent 1

"Yah, lecturers do explain the importance of academic essay writing, because it teaches us about how we can use the English language so knowing how to use the English language help us to communicate, so when we go to our profession, they will help us make reports and presentations in our professions".

Group 1- Respondent 2

"I would say No. I don't remember them teaching us the importance of academic essay. We just use our general knowledge. U use, um, I don't remember attending a class where they taught me how to write academic essay".

Group 2- Respondent 4

"Um…I don't remember any lecturer explaining it. They just ask us to write academics. They send us. Library research information on our own".

In response to the sub-question, "***do the lecturers emphasise the value of essay writing activities? If so, how is it done?", the*** students indicated that the lecturers emphasised the importance of writing essays and highlighted that they are required to write essays, which include assignments and examination. The verbatim responses are presented below:

Group 1- Respondent

"Yes, they give us writing activities. These activities they prepare us to understand what in an exam when you are writing other assignments".

Group 1-Respondent 3

"Yes, they do. One is that they advise us how to reference, when writing for academic purposes".

Group 2- Respondent 1

"Yes, the lectures usually do illustrate the value of writing activities. Uh, whereby they usually stress on the importance of a mind map".

Group 3-Respondent 4

"Yes, by teaching us different types of essays, how to write them and what to avoid when we write academic essays".

Group 3 –Respondent 5

"Yes, they do. They advise us how to reference when writing for academic purposes".

In summary, the findings on the students' conceptions and understanding of what essay writing entails indicate that the students' responses were similar in some instances, but they also differed in other instances. The students viewed essay writing as a process comprising of paragraphs, content, structure, and function. While the other students regarded essay writing as an activity they enjoyed because it required them to think deeply about the topic and to be creative, the others found writing essays as a difficult and challenging activity.

5.2.2 Research question 2: How can a model that integrates PBL and MT enhance the ESL students' writing competencies?

The findings on the question, how effective is a model that integrates PBL and MT in enhancing the students' writing competencies are presented in three sections: a) the students' individual essays before the training session, b) the training session and the students' group essays.

5.2.2.1 The students' individual essays before the training

The findings from the students' essays indicate that the academic essay writing skills are a challenge to some students. The in-margin comments on the feedback to the individual students' essays included words and phrases such as: "audience not addressed", "good introduction'', "improve on introduction", "one idea per paragraph'', ''good argument'', "use relevant linking words to join paragraphs", "revise word order", "avoid long sentences", "improve on punctuation", "poor grammar", "improve on spelling", "avoid slang", and other relevant comments were used as feedback. The comments were aligned to the essay writing rubric that was recommended by Beare and Kenneth (2009). For example, in Columns 2, 3, and 4, which are understanding of the audience, hook or introduction, and thesis or main idea, some students were able to address the three criteria satisfactorily, whereas the others did not. The extract below illustrates the marker's comment from one of the essays.

Extract from student's essay, (P3) (Criteria 2, 3, and 4)

> *"When the chaos of Coronavirus broke in South Africa it had a negative impact on the people of SOUTH AFRICA as a whole: mostly it affected students and lecturers as they had to stop teaching and learning in Universities. Everyone had to stay at home because of the lockdown".*

Though the marker pointed out the issues that the student needed to work on, the vocabulary, spelling and punctuation also needed to be attended to. In addition, the last sentence of the introduction was also erratic. In Columns, 5 and 6, which is the body and closing paragraph, some students were able to write paragraphs which comprised of one idea, whereas the others were not. The findings show that the students have challenges of writing a closing paragraph. The extract below illustrates the marker's comments from one of the essays.

Extract from student essay, (P5) (Criteria 5 and 6)

"The immediate shutdown of universities without warning affected students in our campus negatively as they started panicking, instead of packing everything they came with, they left almost everything thinking it will be over soon, this affected them negatively as essential things were left behind. With lecturers planning ahead of the week they had to teach students for a certain period, now they have to make a load of work to give students.

During lockdown, crime rate has increased in certain aspects for example, murder, domestic violence, and robbery because the loss of income caused people to turn to desperate measures in order to meet their needs. Murder and domestic violence were targeted on women and children leading to the increase of gender-based violence. This caused the loss of jobs since people were taking out their frustrations. In conclusion, the government has tried to alleviate the impact of corona virus by looking for funds elsewhere in order to lessen the impact of the coronavirus on its citizens until the pandemic has been eradicated".

Though the marker highlighted the issues that the student needed to work on, such as punctuation, sentence construction, and the long sentences that also needed to be attended to, in Columns, 7, 8 and 9, which is the sentence structure, linking language and grammar and spelling, some students were able to write meaningful sentences, and they used linking words and corrected their grammar and spelling. The findings indicated that the linking words are a challenge to some students. The extract illustrates the marker's comments from one of the essays.

Extract from student essay (P9), (Criteria 7, 8 and 9)

"Everything stopped, universities, colleges, secondary and primary school were shut down and this affected the process of teaching and learning in all institutions of learning in South Africa. Everyone thought that there was no need to study at home because they thought that there will be no need to study at home because they thought that the 2020 Academic year was a failure, and everything worked hard for was going to be thrown in a bin as waste"

Though the marker highlighted the issues that needed to be attended to, the use of punctuation, and the repetition of information were also a challenge.

The findings for each essay are also presented in the table below as scores under eight categories as identified by Beare and Kenneth (2009): understanding of audience, introduction or hook, thesis or main idea, body with examples, closing paragraph, sentence structures, linking language, as well as grammar and spelling. The individual scores are presented in the following table.

Table 5.1: Students' individual essay scores

Participant	Understanding of audience (4)	Hook/ Introduction (4)	Thesis (4)	Body (4)	Closing Paragraph (4)	Sentence structure (4)	Linking words (4)	Grammar and spelling (4)	Score (32)
P1	2	3	2	2	2	3	2	2	18. 56%
P2	3	2	2	3	2	3	3	3	21. 66%
P3	3	3	3	4	3	3	3	3	25. 78%
P4	2	1	2	2	2	1	1	2	13. 41%
P5	2	2	2	3	2	2	2	2	17. 53%
P6	3	3	3	3	2	3	2	3	22. 69%
P7	4	3	3	4	3	4	3	3	27. 84%
P8	3	3	2	3	2	2	1	2	18. 56%
P9	3	3	3	3	3	3	3	3	24. 75%
P10	2	2	2	3	2	3	2	2	18. 56%
P11	3	4	3	3	4	3	3	3	23. 72%
P12	3	3	3	3	3	3	3	3	24.75%
P13	2	2	2	3	2	2	3	3	19. 59%
P14	4	3	4	4	4	3	4	3	29.91%
P15	3	2	3	3	3	2	3	3	22. 69%
Averages	40/153	39/153	39/153	46/153	39/153	40/153	38/153	40/606	

Table 5.1 above summarises the scores of individual students' essays. Regarding Columns 2, 3 and 4, that is, *understanding of audience*, *hook or introduction and thesis or main idea*, some students scored three and four marks, thus meeting, and exceeding the expectations, whilst the others scored two or one indicating a need for improvement.

In Columns 5 and 6, that is, *the body and the closing paragraph, some students* scored three and four marks, thus meeting and exceeding expectations, whilst the others scored two or one indicating a need for improvement.

 In Columns 7, 8 and 9, that is, *sentence structure, linking language and grammar and spelling,* some students scored three and four marks, thus meeting and exceeding expectations, whilst the others scored two or one indicating a need for improvement. The total scores range between 40% and 90%. Although this study adopted the qualitative research method, the individual students' scores are presented in numbers. The students' essays were used to confirm their responses in a focus group interview.

5.2.2.2   *Training of PBL-MT model*

A total of 15 students were trained on academic essay writing using the PBL-MT model. The stages of the writing process approach adapted from Laksmi (2006) were intergraded into the training. After the training, the researcher observed the students writing essays in groups to determine the model's effectiveness in enhancing the students' writing.

5.2.2.3   *Observations of group essay writing and a sample of the essay*

Firstly, the findings on the observations of the students writing their group essays show that all the three groups of students, A, B, and C approached the collaborative essay writing activity with enthusiasm. The students in Group A started discussing the essay topic, thereafter, they were assigned tasks where one took on the role of a scribe and the others took turns searching for information on their mobile phones. One of the students brought a dictionary but it was not used instead all the students used their mobile phones to search for information. The students also communicated verbally and non-verbally, for instance, by nodding their heads, using eye- contact and facial expressions.

Unlike the Group A students who were more organised, and who focused on the task and actively participated on the writing, the Group B students were not working as a

team. For instance, while the scribe was trying to write, some of the team members were distracted and focused on answering their mobile phones and interrupted the discussions, as a result, the students were seen pointing fingers at each other and shouting at each other. Same as the Group A students, the Group C students were also organised and focused on the task. They assigned each other tasks, discussed the topic extensively and used their mobile phones to find information. In addition, the students took turns, used gestures such as the nodding of heads to show agreement, and the others used fingers to point out information on the mobile phones. Both Group A and C completed the task on time while Group C required additional time to complete that task.

In addition, the students interacted verbally. The researcher could hear the students from the three groups, particularly from Group B which was dominating in terms of verbal cues. The students were heard giving credit to one another, disciplining, and calling one another to order, recognising and countering objections, as well as using strong and confident voices. Furthermore, some students in their groups were heard using filler words such as "like', "um", "yeah'', and "so" as a way of pausing to collect their thoughts, whilst the others were active listeners.

Secondly, the findings from the students' essays indicate that the students found collaborative essay writing beneficial. The in-margin comments were used to provide feedback for the group essays. Words and phrases such as: "audience not addressed", "good introduction'', "improve on introduction", "one idea per paragraph'', ''good argument'', "use relevant linking words to join paragraphs", "revise word order", "avoid long sentences", "improve on punctuation", "poor grammar", "improve on spelling", "avoid slang", and other comments were used on the essays. The comments were aligned to the essay writing rubric as recommended by Beare and Kenneth (2009). The example in Columns 2, 3, and 4, which is the understanding of audience, the hook or introduction, and the thesis or main idea, were addressed differently by the three groups. The extracts below illustrate the marker's comment on Group A's essay.

Extract from the students' group essay, (GA) (Criteria 2,3 and 4)

> *"Coronavirus also known as Covid-19 started in Wuhan City of China and has spread throughout the world. The spread of Covid-19 has forced people in all*

sectors to go into lockdown. All activities shut down because people were told
that the virus spread quickly, and it is deadly. People were advised to wear face
masks and was their hands often and even use sanitisers".

In Columns, 5 and 6, which are the body and the closing paragraph, all the groups A, B, C were able to write paragraphs and closing paragraphs. However, the findings show that not all the paragraphs comprised of one idea. The extract below illustrates the marker's comments on Group B's essay.

Extract from the students group essay (GB) (Criteria 5 and 6)

"Furthermore, our university closed in March 2020. It was a difficult time
because many students did not have laptops to use for online classes. Others
did not have smartphones, and some did not have Wifi at their homes. Shops
were closed and it was difficult for us to buy data. The worst part of it was that
we were told to come back to the university because it was exam time.
Lecturers pumped us with too much work to cover the syllabus. Students were
panicking trying to cover a lot of work within a short period of time. Most
students came back to campus to connect to University WIFI, but it was scary.
We feared each other.

To summarise, Covid-19 is affecting people badly, especially students in all
universities. It changed the way we learn. It closed everyone indoor. We fear to
infect one another. Classes are conducted online but is problem to most
students because not all students have laptops. Those who have them also are
having problems of connecting to Blackboard. Most students don't know how
to use blackboard The University is training students on using Blackboard, but
it is still a problem. Covid-19 is a disaster".

In Columns, 7, 8 and 9, which are the sentence structure, the linking language and the grammar and spelling, Groups, A and C students were able to write meaningful sentences, using linking words, as well as correct grammar and spelling. However, Group B was not orderly, even their essay had errors that could have been avoided. The findings indicate that the students need to improve on vocabulary and punctuation. The extract below illustrates the marker's comments from Group C's essay (criteria 7,8 and 9).

Extract from the student group essay, (GC) (Criteria 7,8 and 9)

> *"In South Africa, Covid-19 started in March 2020. Schools, colleges, and universities closed because the department of Education feared students will be infected and die in numbers. Students in universities were told to go home. No one knew what would happen next. Then the government start to promise students data, some laptops and tablets and data so that they can attend classes online. In addition, the universities promised to give each and every student data so that they can connect to online classes. It is difficult cause some students stay in rural area"*

Though the marker indicated the issues that the students need to work on, punctuation, and the wrong use of words were a challenge. The findings show that Groups A and C's academic essays were better than that of Group B.

Thirdly, the findings from group essays are presented in the table below as scores under eight categories as identified by Beare and Kenneth (2009): the understanding of audience; introduction or hook; thesis or main idea; body with examples; closing paragraph, sentence structures, linking language, and grammar and spelling. The table that follows illustrates the collaborative essay scores.

Table 5.2: Collaborative essay scores

Group	Understanding of audience (4)	Hook/ introduction (4)	Thesis/ main idea (4)	Body with examples (4)	Closing paragraph (4)	Sentence structure (4)	Linking Language (4)	Grammar and spelling (4)	Score (32)
G A	3	3	3	4	3	4	4	3	27. 84%
G B	3	3	4	3	3	4	3	3	26.81%
G C	4	3	4	4	4	3	4	3	29. 91%
Average	10/12 0.83	9/12 0.75	11/12 0.91	11/12 0.91	10/12 0.83	11/12 0.91	11/12 0.91	9/12 0.75	

Regarding Columns 2, 3 and 4, that is, *understanding of audience*, *hook or introduction and thesis or main idea,* some students scored three and four marks, thus meeting,

and exceeding the expectations, whilst the others scored two or one indicating a need for improvement.

In Columns 5 and 6, that is, *the body and the closing paragraph, some students* scored three and four marks, thus meeting, and exceeding the expectations, whilst the others scored two or one indicating a need for improvement.

In Columns 6, 7, 8 and 9, that is, *closing paragraph, sentence structure, linking language and grammar and spelling,* some students scored three and four marks, thus meeting, and exceeding the expectations, whilst the others scored two or one indicating a need for improvement. The total scores range between 81% and 84% thereby indicating that there was some improvement in how the students structured and wrote their essays.

In summary, the findings show that the students' challenges of academic essay writing were minimal when they wrote essays collaboratively using their mobile technologies. The scores obtained by Groups, A, B, and C indicate that the students improved on essay writing, when compared to the scores obtained in individual student essays. Thus, the students found the collaborative essay writing activities useful and hence their essay writing improved as indicated in the scores. Thus, the PBL-MT model contributed to enhancing the students' academic essay writing. The findings of the third research question are presented below.

5.2.3 Research question 3: What are the ESL students' conceptions of collaborative essay writing activities using the PBL-MT model?

The discussion of the findings is aligned to the following four sections: the students' experience of writing group essays, the students' attitudes towards collaborative writing, the students' collaborative writing habits, and the students' understanding of the importance of collaborative writing in their studies.

5.2.3.1 Students' experiences of writing group essays

The students' experiences of writing group essays are addressed in four subsections: what they know about collaborations, what they liked about writing academic essays using the PBL and MT and why, what they disliked about writing academic essays using the PBL and MT and why, and did they ever write academic essays in groups using PBL and MT? If so, how was it like?

First, on their knowledge of, "*what they know about collaboration in academic essay writing?",* the findings indicate that several students regarded collaboration as teamwork or working together towards attaining a specific goal. The verbatim responses are presented below.

Group 1- Respondent 4

"Uh… collaboration is when we, I mean students work together to complete a task within a given time frame".

Group 2- Respondent 4

"OK, I may say that it is the action of working with someone to produce something. Like doing a project together".

Group 1- Respondent 5

"Collaboration is when we work together as a group towards a common goal".

Group 2-Respondent 1

"Uh. Collaboration means working together to find solution".

Group 3- Respondent 4

"I know collaboration as a process whereby people work as a group to accomplish a certain mission".

Secondly, in response to the question, "*What they liked about writing academic essays using PBL and MT and why?, the* students indicated that technology made it easy to find information on any topic. They did not have to wait for or rely on the lecturer. The model also enabled them to work as a team and share ideas with peers and it also improved their vocabulary. Some of the verbatim responses are presented below.

Group 1- Respondent 1

"It's much easier to use MT like at the moment we use the internet to search for information. You see other peoples" opinions. Then you flip it over".

Group 2- Respondent 3

The online dictionary helped to explain some difficult words".

Group 1-Respondent 5

"Uhm…I liked that we were able to search for information about the essay on our own, I mean, without the help of our lecturer".

> ### *Group 2-Respondent 1*
> *" Eh…I liked the fact that we did get the chance to share different ideas on a particular time, on a particular topic even talked among ourselves".*
>
> ### *Group 3- Respondent 5*
> *"I liked writing and listening to my group mates when they tell me to write sentences because I volunteered to be a scriber".*

Thirdly, in response to the sub-question, "*What they disliked about writing academic essay using the PBL and MT and why?, the students* indicated that they find it difficult to engage with the team in the group writing essays, for example, one student indicated that, "*I didn't like to write an academic essay in a group cause I like expressing myself in writing so writing academic in group wasn't a good thing for me".* The findings also show that some students tend to be distracted by their mobile phones as they search for information, while the others go to an extent of deviating from the task, and the others are distracted because they are unable to multitask on their mobile phones and they distract fellow students. The verbatim responses are presented below.

> ### *Group 1-Respondent 1*
> *"At some point they were ahead of me, like I was left behind because my cell phone was too slow to open. Maybe the network was very low, I don't know".*
>
> ### *Group 1- Respondent 5*
> *"Competition of talking. Our group was not organised. Uhm, some student spoke up throughout like they did not allow others to talk".*
>
> ### *Group 2- Respondent 3*
> *"I didn't like when my group mates were taking long to agree on a point".*
>
> ### *Group 3-Respondent 5*
> *"I did not like when we did not agree on some points. So, I was writing, and cancelling. Eh… I was even tired of writing cause we cancelled, started afresh, and so on. But we managed to submit a clean essay".*

Fourthly, in response to the sub-question "*Did you ever write academic essays in groups using PBL and MT? If so, how was it like?',* some students found the experience most rewarding, while others found it most challenging. Some students

had no experience of writing essays in groups. The students had very little, or no experience of the PBL-MT model and group writing is not a common practice. While some students who experienced group activities found it beneficial, the others found it challenging and others did not like working in groups. The verbatim responses are presented below.

> **Group 1- Respondent, 2, 4**
>
> *"Yes, when we were writing an assignment, I must say it was good "because we managed to share ideas and complete the assignment quickly".*
>
> **Group 2- Respondent 2; Group 3 Respondent 2**
>
> *"Yes. In one lecture, we were asked to sit in groups and discuss difference between academic essay writing and general writing".*
>
> **Group 3-Respondent 4**
>
> *"Yes, uh…it was helpful cause we assisted one another, and we used our mobile phones to search for information about the topic".*
>
> **Group 3- Respondent 5**
>
> *"Yes, we once wrote a group essay, but focus was academic language and I learnt so many things like words I didn't know before, from my group mates".*
>
> **Group 1- Respondent 3**
>
> *"No. We had never attended a lecture where we write together in class, I heard that others did".*
>
> **Group 1- Respondent 5**
>
> *"No, we were once given a group assignment, so I only wanted to have a group Uhm. it never worked. People kept giving excuses".*
>
> **Group 2- Respondent 1**
>
> *"No. we were never given a task of that nature. I mean the one that compelled us write in a group".*

5.2.3.2   *Students' attitudes towards collaborative essay writing*

The students' attitudes towards collaborative essay writing are addressed in three subsections: *Whether they enjoyed writing academic essays using the PBL and MT and why? Whether they were confident about sharing information with their group members using technology and how they displayed their confidence? and what was*

the attitude of other group members towards collaborative essay writing using technology and why?

In the response to the sub-question, "*Did you enjoy writing academic essays using PBL and MT and why?,* some students indicated that they were experiencing the writing academic essays in groups using mobile technologies for the first time and they enjoyed it, while the others indicated that they did not enjoy working in groups at all. The verbatim responses are presented below.

Group 1- Respondent 1

P1-Yes, What I liked about writing an academic essay in that context is that you get views from people".

Group 2- Respondent 2

"OK The sum. Found definitions that I didn't know but using cell phone device, it helps me".

Group 2- Respondent 4

"I liked it. I was writing points down but sometimes help to search for articles on google chrome. I did that to help speed up the process".

Group 3- Respondent 3

Honestly speaking, I don't like group discussions, that's why I volunteered to be scriber even though it didn't work".

In response to the sub-question, "*Did you share information with your group members using MT with confidence and how did you display your confidence?,"* some students indicated that their levels of confidence were boosted because they shared information with their peers, while the others indicated that they did not enjoy working as a group and were anxious about sharing information with the group. The verbatim responses are presented below.

Group 1- Respondent 1

"Yeah… sharing information increases my confidence because it was easier to like to give opinion to someone".

Group 3- Respondent 2

"Yes, writing academic in a group did not bother me".

Group 3- Respondent 3

"Yes, I have confidence, of writing and speaking".

Group 1-Respondent 3

"No. Basically, I did have confidence of sharing information, like we worked together like we debate Wiki, communicating shows that one has confidence, and then it helps us to communicate as a group".

Group 3- Respondent 4

"No. That's why I volunteered to be scriber".

In response to the sub-question, "*what was the attitude of your group members towards collaborative writing involving technology and why*?," the findings indicate that several students regarded collaborative writing using MT as team work. The verbatim responses are presented below.

Group 1- Respondent 1

"OK my group members were like very easy to talk to. They were collaborating and made everything easier so that we come together as one. This whole thing looks like team".

Group 1- Respondent 3

We shared ideas, even though it took us long to finish writing the academic because sometimes we did not agree on a point. As scriber I learnt to be patient".

Group 1- Respondent 4

"They were collaborative also welcoming. We worked well because in a group you are supposed to give each other chance to state your opinion in order to work as a team, so that's what happened in this group."9 teamwork".

Group 2- Respondent 1

"My group members were like working together even though sometimes they were arguing a lot about what to write".

Group 2- Respondent 2

"We shared information even used our cell phoned together to research".

Group 3- Respondent 4

"They were good because in a group we are supposed to give each other chance to state our opinions in order to work as a team, so that's what we did".

Group 3- Respondent 5

"It was good. We argued over some points, but the arguments were reasonable. I mean… there was no one who showed us anger of some sort. We argued sometimes, but at the end we managed to complete the task".

Group 2- Respondent 3

"I did not like it when other students were ahead of me, like I was left behind because my cell phone was slow to open apps".

5.2.3.3   *Students' collaborative writing habits*

The students' collaborative academic essay writing habits are addressed in two subsections: *did you participate actively during the collaborative academic essay writing activities and how?* and *how did the group compile the academic essay?* Firstly, in response to the question "*did you participate actively during the collaborative academic essay writing activities and how?",* the students indicated that they participated actively and completed some tasks for the team. Some of the verbatim responses are presented below:

> **Group 1- Participant 1**
>
> *"Yes, I did take the responsibility because I was giving out some facts and I was also trying to search for information on my phone".*
>
> **Group 2- Participant 2**
>
> *"I searched for information on google chrome".*
>
> **Group 3 – Participant 3**
>
> *"Yes, we did I used my cell phone search for information we were looking for on google".*
>
> **Group 1- Respondent 4**
>
> *"We had to share I did share my views about the topic".*
>
> **Group 2- Respondent 1**
>
> *"Yes, I did take the responsibility because I was giving out some facts and I was also trying to summarize information that I have researched a lot to avoid this plagiarism".*

Group 3- Respondent 3

"Yes…we were able to share information and reached decisions".

Secondly, in response to the question, "*how did you compile the essay*?", the students indicated that they, focused on writing the key points in a mind-map format, identified the main ideas as well structured the essay in the paragraphs and outlined, the introduction, the body, and the conclusion. Some of the verbatim responses are presented below.

Group 1- Respondent 2

"We wrote all the key points and checked them using our mobile technologies entry".

Group 1- Respondent 3

"Uhm… we wrote all key words of the topic first and researched them in our phones then wrote the essay in paragraphs. What we did was …eh…we started with the Introduction, then body and then conclusion".

Group 2- Respondent 1

"We started with a mind-map and wrote key points for our essay, then extended them into sentences".

Group 2- Respondent 2

"We made all the checkpoints….key points so that you can use each entry points to each paragraph. We drafted mid map".

Group 2- Respondent 5

"Eh…we stated by analysing the topic by even checking the meaning of some word online, then we drew a spiderlike diagram and then wrote more key points. Then we wrote sentences and wrote paragraphs making sure that each paragraph speak of one thing".

Group 3- Respondent 1

"Uh..when we start is like we did not have like direction. We were not organised, but we managed to start. We stated by researching key words of the topic then wrote mind-map and from there we started the essay until we finish".

Group 1- Respondent 4

"We first explained key words, wrote sentences to form paragraph. Is true we began with introduction, until we finish with conclusion".

Group 2- Respondent 1

"We started with a mind-map and wrote key points for our academic, then extended them into sentences. Then we wrote an introduction, body, and conclusion".

Group 2- Respondent 4

"We looked at the topic and highlighted key words. Then checked the meaning of the key words online and wrote the meanings on a mind-map. From there, we checked the ones which can form introduction, body and so on. Then we started with introduction, followed by body then conclusion. That's how we wrote our academic".

Group 3- Respondent 2

"Uhm…each of us contributed a point about the topic which our scriber wrote in a mid-map. Then we extended our points into sentences making sure we start with topic sentence, then we wrote".

Group 3- Respondent 5

"We started by checking the key words in our mobile phones, I mean the online ones. That helped us to understand the topic, then we drew up a mind map, then wrote other key points about topic on mind map then expanded them into sentences but followed the structure of academic like we started with introduction up to conclusion".

5.2.3.4   Students' understanding of how the PBL-MT model can enhance their essay writing competencies

The students' understanding of how the PBL, and MT can enhance their essay writing competencies is addressed in two questions, **"*Did the process of writing an academic essay using the PBL-MT model enhance your essay writing competencies and how'?*** and, "*Does writing an academic essay using the PBL-MT model encourage active participation and networking with fellow students and how?'*

Firstly, in response to the question, *"did the process of writing an academic essay using the PBL-MT model enhance your essay writing competencies and how?", the* students indicated that the model was beneficial in various ways. The verbatim responses are presented below.

Group 1- Respondent 3

"Yeah, it helps you gain knowledge and then you should see different views of people from articles we retrieved, how they structure their essays and what you should do when you are dreaming of writing group academic next time. If you do not get it right this time".

Group 1- Respondent 4

"Yes…Finding new ideas was great for me, so I f I got hired as a teacher. I can advise my learners about group essay writing using mobile phones".

Group 2- Respondent 1

"Yes, we learnt a lot from each other and how to use mobile phones to write a group essay".

Group 3- Respondent 4

"Yes, I learnt the skills of writing group essays using mobile phones".

Secondly, in response to the question, "*Does writing an academic essay using the PBL-MT model encourage active participation and networking with fellow students and how?", the* students indicated that they were active in their groups and extended friendship outside the classroom environment. The verbatim responses are presented below.

Group 1- Respondent 1

"Yes, it does encourage active participation. And we made friends. I think our friendship will continue after this session".

Group 1-Respondent P3

"Yes, it does. No one, no one was passive in our group. We all searched for meaning of some difficult words using google chrome and the scriber was writing what we told her to write".

Group 1- Respondent P5

Yes, it does. Because everyone is able to bring out their own ideas".

Group 2- Respondent 1

"P1-Yeah. I didn't know 2 of my group members, Yah, now we are friends. I mean I know their names and yah we will continue being friends".

Group 2- Respondent 3

"Yes. We are all active. We all searched for some information about the essay using our cell phones, except for the one who was writing points".

Group 2- Respondent 4

"OK, yes, we were active, and our friendship will continue even after class".

Group 3- Respondent 1

"Yes. It does, When we start, I was a bit shy to talk I must say it was difficult for me to share what I know about the topic… but now I' m free, we talk we laugh together".

Group 3- Respondent 2

"Yes. We were all active. I liked group work 'cause it boosted my confidence and I made friends".

Group 3- Respondent 4

"Yes. All of us were active. I wish we could continue to write assignments together like we did today".

5.3   Summary

Overall, the findings on the students' conceptions of collaborative writing activities using the PBL-MT model indicate that some students found the PBL-MT model challenging, time-consuming, confusing, and cumbersome because they had to work in groups, collaborate, discuss, and negotiate with group members on what the essay should be about and how to go about it. However, the others thrived from the experience because they had an opportunity to work together, hear other's views and share ideas when writing their essay.

5.4   Conclusion

This chapter presented and discussed the research findings under each research question. The chapter also provided a summary of the research findings. The next chapter will provide an analysis and synthesis of this study's findings, the conclusion, and the recommendations.

CHAPTER 6:   ANALYSIS, SYNTHESIS OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

6.1   Introduction

The previous chapter presented and discussed the research findings. This chapter presents an analysis and the synthesis of the findings, followed by the conclusions and the recommendations.

As stated in Chapter 1, this study sought to answer the following research question: How can an integrated PBL-MT model enhance the students' academic essay writing competencies in an ESL context?

The four secondary research questions are:

1. What are the ESL students' conceptions of their academic essay writing competencies?
2. How can a model that integrates PBL and MT enhance the ESL students' writing competencies?
3. What are the ESL students' conceptions of collaborative essay writing activities using a PBL- MT model?
4. What guidelines can inform the effective use of the PBL-MT model to enhance the ESL students' academic essay writing competencies?

6.2   Findings from Research Questions 1, 2, and 3

This section presents the key findings of this study focusing on each research question. The findings of the first research question are presented below.

6.2.1 Research question 1: What are the ESL students' conceptions of their academic essay writing competencies?

Some students indicated that they found writing academic essays challenging. The students' responses that academic essay writing is difficult, and challenging are consistent with Oikarinen-Jabai's (2018) claim that writing has always been seen as the most troublesome and challenging area of language learning for all the students without including the students' educational background, the levels of preparedness, as well as the academic English language proficiency of the lecturers, tutors, and the academic language proficiency of students. In addition, the findings correspond with

Fadda's (2012:127) claim that the ESL students face many challenges and stresses in their academic essay writing, some of which are caused by failing to distinguish between the spoken and the written styles in English texts. The researcher contends that the ESL students must be exposed to plenty of academic essay writing activities as that would help them to improve their academic essay writing skills.

Another key finding is that the ESL students recognise that, to write a 'good' academic essay, the writer should first understand the topic because this will help the writer to develop a good argument. A 'good' essay is defined by Redman and Maples (2017) as a matter of learning and a mastery of the universal rules such as grammar, usage, and text organisation. The findings correlate with Ivrin's (2014) claim that academic essay writing is an argument associated with thinking, which depends on how well the students understand and think about the topic or how they approach the writing task. In addition, the findings are consistent with Bennet's (2018) claim that academic essay writing and thinking are inseparable. The findings also indicate that the students understand the importance of academic essay writing in their studies. The researcher contends that for the students to produce 'good' essays, they should comprehend the essay topic first, then, they would be able to generate arguments that may be arranged coherently.

Although it is evident that the ESL students acknowledge that planning is the first stage of essay writing, Laksmi (2006) describes the planning of essay writing in stages that are different from the student's conceptions. Moreover, Flower and Hayes's (1981) claim that planning involves a series of sub-processes such as generating ideas where the writer retrieves relevant information from his/her long-term memory. The researcher contends that planning to write an academic essay is the most critical stage of academic essay writing because it is the foundation for the essay. The content, structure and language used in essay writing are some of the planning stages.

6.2.2 Research question 2: How can a model that integrates PBL and MT enhance the ESL students' writing competencies?

The findings indicate that while some students benefitted from the PBL-MT model, the others found the model inhibiting in that they were expected to work collaboratively. In addition, some of the ESL students did not have any experience of using an integrated

PBL-MT model to write essays. This was evident during the training of the PBL-MT model using the writing process approach. However, the students acknowledged that the PBL-MT model can enhance their learning. These findings correlate with the research studies that show that mobile technologies can support traditional lecture-style teaching, promote innovative teaching methods such as cooperative learning (Lan, Sung, Chang, 2007; Roschelle et al., 2010) and exploratory learning outside the classroom (Liu, Lin, Tsai & Paas, 2012). The findings resonate with the OCL theory which supports and promotes the use of technology, in this instance, mobile phones, in teaching and learning, particularly in the essay writing classes. In addition, the findings correspond with Savery's (2015) claim that PBL is an instructional and curricular student-centred approach, which can empower the students to conduct research, integrate theory and practice, as well as apply knowledge and skills to develop a viable solution to a defined problem. Lastly, the researcher contends that the use of the PBL-MT model has the potential to enhance the students' essay writing competencies effectively, because the students are not only required to focus on the writing, but they also learn from each other as they seek and share information, argue, and debate about the topic at hand, as well as make decisions on how to approach the essay writing.

The students in this study displayed that writing academic essays in groups using MT is beneficial and can enhance their essay writing skills. The group essays using MT served as evidence that the integrated PBL-MT model can enhance the students' academic essay writing competencies. The finding corresponds with Savery's (2015) claim that PBL is an instructional and curricular student-centred approach, that can empower the students to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem. In addition, the finding correlates with Shohel and Power's (2010) claim that MT supports the traditional lecture-style teaching, and it also promotes innovative teaching methods such as cooperative learning (Lan, Sung, Chang, 2007; Roschelle et al., 2010) and exploratory learning outside the classroom (Liu, Lin, Tsai & Paas, 2012). The above findings resonate with the OCL theory which incorporates the use of computers and the internet in teaching and learning, particularly in writing classes. Lastly, the researcher contends that the collaboration or PBL promotes social interaction as

students would help one another and learn from one another. Besides, some students find it easier to learn and benefit from practice when they engage with their peers.

6.2.3 Research question 3: What are the ESL students' conceptions of collaborative writing activities using a PBL-MT model?

The findings show that the ESL students acknowledge that writing academic essays in groups or as a team can be beneficial and can boost their confidence. This finding is consistent with Diebel's (2005) claim that team and group work can enhance the student learning effectively and correlate with Rogers's (2013) claim that as an activity that requires students to collaborate and work together to address a problem, it is a powerful model that can enrich student writing. Most importantly, the finding resonates with the OCL theory that underpins this study and it promotes the integration of PBL-mobile technologies to promote effective teaching and learning, particularly in the writing classes.

Furthermore, the findings are consistent with Savery's (2015) claim that PBL is an instructional and curricular student-centred approach, which can empower the students as they conduct research collaboratively, integrate theory and practice and apply knowledge and skills to develop a viable solution to a defined problem. The researcher contends that teamwork is beneficial in academic essay writing as it can develop and improve the students' communicative and collaborative skills and as shown in this study, the students' essay writing competencies can also be enhanced through collaborative and group writing activities.

6.2.4 Research question 4: What guidelines can inform the effective use of the PBL-MT model to enhance the ESL students' academic essay writing competencies?

The guidelines for the implementation of a PBL-MT model are presented below.

6.2.4.1 Background

To enhance essay writing using an integrated PBL-MT model successfully, this study suggests the following elements: teaching presence, learner presence, MT presence (Shear & Bidjerano, 2010; Shandu-Pheta, 2017), and internet presence (Haron & Rahmat, 2020). It is crucial to note that the elements are interrelated and work in synergy. The four elements are presented in the figure that follows.
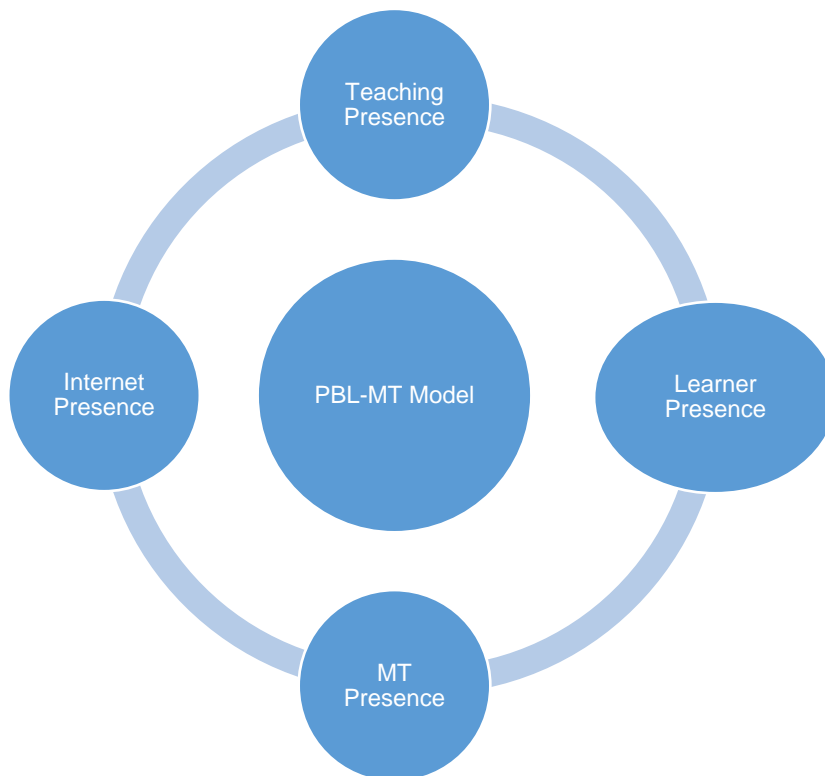
Figure 6.1: The guiding principles for the implementation of a PBL-MT model (Adapted from Shandu-Phetla, 2017)

Figure 6.1 illustrates the PBL-MT model. As stated earlier, the four elements are intertwined in complex ways such that none can be ignored or prioritised over the other.

6.2.4.1.1   Teaching presence

For the students to enhance essays using the PBL-MT model effectively, teaching should take place. A teacher should be present to impart knowledge and guide the students in knowledge construction. The students alone may not make it. The teacher presence can assist the students to progress from confusion to the solutions of the problems they might face in the process of writing essays using the model. The teacher should be available as a facilitator as much of the work in a PBL-MT model learning context should be done by the students. Teaching presence is also supported by Harasim (2012) who maintains that the Community of Inquiry (CoI) model that is defined by Garrison, Anderson, and Archer (2000) is somehow similar to the OCL

model which underpins this study. The CoI model refers to the teaching presence as the "design, facilitation, and the direction of cognitive and social processes for the purpose of realising meaningful personality (Anderson, Liam, Garrison & Archer, 2001). The OCL theory proposes a teaching and learning context in which the teacher plays a key role as a facilitator and the link to the knowledge community. Thus, the teacher or lecturer should be available to direct instruction and assist the students to focus on the task at hand.

6.2.4.1.2 Learner presence

PBL is a student-centred approach in which the learners construct their knowledge, and the teacher is available as a guide, whenever required. Using the PBL-MT model requires the students to work collaboratively and use their mobile phones to seek information and thus enhance their essay writing. Thus, through collaboration, the students work together to support each other (Rogers, 2013), and search for information together to solve a problem. In this instance, the students write a coherent and cohesive essay, that is based on their topic of choice (Chang & Lee, 2019) while using their mobile phones to collectively learn and build new understandings (Harasim, 2017:15) on how to enhance their essay writing competencies.

6.2.4.1.3 MT presence

For the students to enhance their essay writing competencies using the PBL-MT model, they should have their mobile phones which can be used to search for relevant information for addressing the essay writing task they are required to work on. To enhance their essays, each student within a group should own a MT device and remain focused.

6.2.4.1.4 Internet presence

For the PBL-MT model to be functional, the internet should be readily available, and it must be accessible so that the mobile technologies can function optimally. One of the premises of the OCL theory is that learning becomes effective when the students learn online and collaboratively in a formal and informal educational setting (Kosar, 2021: 1). The above premise resonates with the PBL-MT model that emphasises collaboration and the use of mobile technologies to enhance essay writing. The internet enables the students to clarify and rectify the misunderstandings without difficulty; and to work swiftly to a better understanding of specific writing projects (Du,

Wang, Zhou, Xu, Fan, & Lei, S, 2018). The OCL theory confirms Dogiriti's (2015) claim that the access to the internet, can enable the students to learn at any-time and any-where because they can easily access information.

6.3   Limitations of the study

Like any study, this study had its limitations. Therefore, it is essential to reflect upon some of these limitations. Firstly, this study was limited to the students registered for the first-year English module. The study was not aimed at improving the pass rate of the students, instead, it focused on exploring how the PBL-MT model can enhance their academic essay writing competencies. Generally, the first-year students at universities face difficulties in writing essays, therefore, this study contributes to developing guidelines for using the PBL-MT model in support of the students and it enhances their essay writing competencies.

Secondly, although the University of Limpopo is one of the largest contact universities in South Africa, the current study used a small student sample, and the participants were from a single first-year English module. The focus was on the depth and duration of the focus group interviews and classroom observations. According to Fossey et al. (2002: 726), a small sample was deemed necessary to make data more manageable. The third limitation was that because of the Covid-19 lockdown restrictions, this study used the Google Meet platform, a platform authorised by the university, to collect some of the data.

Furthermore, the principal threat in this study might be researcher bias because the researcher was involved in data collection. Data was collected online and, in a face, - to- face context. For the face -to -face data collection, the Covid-19 health and safety measures were adhered. To address the possibilities of researcher bias, this study relied on critical self-reflection as recommended by Johnson and Christenson (2004), who claim that critical self-reflection is essential to enhance the awareness of any bias. In addition, the researcher adhered to Braun and Clarke's (2006) steps of data analysis, a reiterative process that required the researcher to move back and forth and to continuously reflect on defining and redefining the codes and themes throughout the data analysis process.

Lastly, the findings of this study cannot be generalised because the research is a case study. The current study used a limited sample that stemmed from a specific

institution, module, and population. However, the study can yield some useful insights for similar educational contexts as well as other contexts which intend employing the PBL-MT model to enhance the students' academic essay writing competencies.

6.4   Conclusions

The study explored an integrated PBL and MT model to enhance the first-year ESL students' writing. The study found the following: the findings from the first phase of the study revealed that in general, the first-year ESL students found writing academic essays in English difficult and challenging. The findings from second and third phases showed that while some students found the integrated PBL and MT model challenging because they had very little experience of working collaboratively on a writing project in a group, the others, however, found the experience enriching. These students benefitted from the collaboration which involved interacting and sharing ideas with each other in their groups, using their mobile phones to search for information, as they debated on the relevance and/or irrelevance of the information, before agreeing and deciding on the most appropriate and relevant information, then deciding on the best way to approach the essay writing task. To that end, because the students were actively engaged, justifying, and learning from each other, the group essays showed more depth, and the quality of writing was more enhanced.

Finally, the aim of this thesis was to explore how an integrated PBL-MT model can enhance the first-year students' academic essay writing competencies in an ESL context. When I started this project, I found it difficult and challenging as I had not engaged in this type of research previously and had to also contend with the COVID-19 lockdown protocols and challenges. But through the guidance and support of my supervisor and others around me, I was able to complete it. It was a very demanding project, interesting and adventurous at the same time as I worked on it and approached it as a puzzle that has to be resolved until I reached the end.

6.5   Recommendations

Guided by the findings in this study, the researcher recommends the following:

1) Recommendation 1: The academic essay writing course should be compulsory for all the first-year ESL students, and it must incorporate the integrated PBL and MT Model because the students are required to not only focus on the essay writing but are also consciously and unconsciously expected to think about,

rethink and justify their decisions and actions. This will entail the university amending its policies and allow students to use mobile phones in the classroom.

2) Recommendation 2: The university policies should permit the students to use mobile technologies during lectures, especially in the first-year ESL students' lectures.

3) Recommendation 3: All the first-year courses should include compulsory academic essay writing programmes that aim at enhancing the students' academic essay writing competencies.

4) Recommendation 4: The first-year ESL practitioners should design interactive online sessions to prepare the students for the new environment of online collaborative learning and the expectations of PBL and MT, among others.

6.6 Recommendations for further research

1) Recommendation 1: The findings indicated that the sample used for this study was small. Therefore, it is recommended that a similar study which includes all the first year ESL students registered for the same English course be conducted.

2) Recommendation 2: It is recommended that further research studies on the first-year ESL students' writing competencies across all first-year courses at UL must be conducted.

3) Recommendation 3: It is recommended that a longitudinal research study must be carried out on the ESL first-year students' writing competencies over a period of 3-4 years or more.

6.7 Conclusion

In conclusion, this study provided the insights on first year ESL students' conceptions of academic essay writing and how the use of the PBL-MT model can enhance the ESL students' academic essay writing competencies. It showed that integrating the PBL- MT model can enhance the students' academic essay writing competencies in ESL contexts and contribute significantly to the improvement of teaching and learning at the University of Limpopo. It also highlighted the need for the institution to embrace the use of mobile technologies and PBL as key approaches that the university should adopt to align the developments in teaching and learning nationally and worldwide.

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APPENDICES

APPENDIX A: APPLICATION LETTER TO THE UNIVERSITY OF LIMPOPO

UNISA

PERMISSION LETTER

Request for permission to conduct research at University of Limpopo

'Integrating project-based learning and mobile technology to enhance student writing in English Second Language (ESL) contexts: a case study of a University in South Africa.'

Dr M J Mogoboya
New K Block, 6th Floor, Office 6001
Department of Languages
015 268 2257 / mphoto.mogoboya@ul.ac.za

Dear Dr Mogoboya

I, Morongwa Adolphina Choshi, am doing research with Mirriam Lephalala, a Professor in the Department of English Studies toward a PhD at the University of South Africa. We have funding from M & D Bursary offered by UNISA, for running all the processes of research. We are therefore requesting permission to conduct research using English Studies students in the Department of Languages, School of Languages and Communication- Faculty of Humanities at the University of Limpopo. The study in question is titled "Integrating project based learning and mobile technology to enhance student writing in English Second Language (ESL) contexts: a case study of a University in South Africa.'

The aim of the study is to explore the effectiveness of using an integrated project-based learning and mobile technology model to enhance student's writing competencies in English Second Language (ESL) contexts.

Your institution has been selected because it caters for English Second Language students who write essays. In addition, the university is selected because the researcher believes that in this era, most students use mobile technology to enhance their learning.

The study will entail observation of students when they write essays, followed by completion of questionnaires by the same students and lastly, focus group interviews will be conducted for the purpose of triangulation.

The outcomes of this study will contribute to the existing body of knowledge and future researchers on the same topic. In addition, the outcomes will be of great value as they will be

APPENDIX B: APPROVAL LETTER FROM THE UNIVERSITY OF LIMPOPO

UNIVERSITY OF LIMPOPO
TURFLOOP CAMPUS

Faculty: Humanities
School: Languages and Communication Studies
Department: Languages
Discipline: English Studies

Private Bag X1106
Sovenga
0727
Tel: +27 15 283 2287/3009
Fax: +27 15 268 3209/2868
Cell: 073 138 3364
E-Mail: mphoto.mogoboya@ul.ac.za

24 February 2020

TO WHOM IT MAY CONCERN

This letter serves to grant consent to **MORONGWA ADOLPHINA CHOSHI (30058899)**, who is a registered PhD, English Studies student at the University of South Africa (UNISA) to conduct research titled "**Integrating project-based learning and mobile technology to enhance student writing in English Second Language (ESL) contexts: a case study of a University in South Africa**". I understand the purpose of this research as stipulated in her letter of request for permission and therefore, have no objections to this research being carried out. I further appreciate the fact that the research findings will only be used for academic purpose.

I hope you find the contents of this letter in order.

DR M.J. MOGOBOYA
HoD: LANGUAGES

UNIVERSITY OF LIMPOPO
SCHOOL OF LANGUAGES AND
COMMUNICATION STUDIES
HEAD OF DEPARTMENT

2 4 FEB 2020

DEPARTMENT LANGUAGES
PRIVATE BAG SOVENGA 0727

APPENDIX C: ETHICAL CLEARANCE LETTER FROM UNISA

UNISA | university of south africa

UNISA COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS COMMITTEE

17 July 2020

Dear Ms Choshi,

| NHREC Registration # : REC-240816-052 |
| CREC Reference # : 2017-CHS-026 |
| Name : Ms Morongwa Adolphina Choshi |
| Student #:30058899 |

Decision: Ethics Approval from 17 July 2020 to 16 August 2023

Researcher(s):   Morongwa Adolphina Choshi
+27731732265
choshima@vodamail.co.za / 30058899@mylife.unisa.ac.za

Supervisor (s):   Prof. Mirriam Madikwe Keagile Lephalala
+27072 9507945/012 429 6396
mlephalala@gmail.com

Working title of research:

Integrating Project-Based Learning and Mobile Technology to enhance first-year students' writing in English Second Language contexts: a case study of a University in South Africa

Qualification: Ph.D

Thank you for the application for research ethics clearance by the Unisa College of Human Sciences Research Ethics Committee for the above-mentioned research. Ethics approval is granted for 5 years.

This low risk application was reviewed by the Chair of Department of English Research Ethics Committee on 17 July 2020 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.
The proposed research may now commence with the provisions that:

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

APPENDIX D: CONSENT LETTER TO THE RESEARCH PARTICIPANTS

CONSENT TO PARTICIPATE IN THIS STUDY

I, Maganyane Surprise, confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read the Participant Information Sheet and understood the study as explained on it.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the Focus Group Interviews.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname Surprise Maganyane

Participant Signature....~ *M.Ssengere Surenk.* Date 16 March 2020

Researcher's Name & Surname Morongwa Adolphina Choshi

Researcher's signature.....*Am. Usf.* Date 16 March 2020

APPENDIX E: PHASE 1 FOCUS GROUP INTERVIEW PROTOCOL

Phase 1: Focus group interview protocol questions before the training of the PBL-MT model

Title:

Integrating PBL and MT to enhance student writing in English Second Language (ESL) contexts: A case study of a University of Limpopo in South Africa.

Research Question:

How can an integrated PBL-MT model enhance students' academic essay writing competencies in an ESL context?

Purpose of the study:

The purpose of this study is to explore how an integrated PBL-MT model that can enhance students' academic essay writing competencies in an ESL context.

Introduction:

Good day, my name is Morongwa Choshi. I am here to talk to you about your personal experiences of essay writing. Your personal reflections and thoughts are crucial for the purpose of this study. I have compiled questions which I will ask, and they are categorised into themes. The main focus of the questions will be related to how you used to approach essay writing. Your name and the information given to me will be kept secret.

I will use a tape recorder to tape our conversation. Please be relaxed in answering as there is no correct answer. The correct answer is what you think and what you want to say. Lastly, give each other chance to respond to the question asked.

Questions:

Students experience of essay writing

1. What do you know about essay writing?
2. What is it that you like about essay writing and why?
3. What is it that you dislike about essay writing and why?
4. What guidance did you get from your lecturer regarding essay writing?

Students' attitude towards writing

1. Do you have confidence of writing essays individually and why?
2. How do you feel when the lecturer instructs you to write an essay?

3. How is your motivation affected when you write an essay about a topic which you do not understand?

Students writing habits

1. Do you plan your essays and how?
2. Do you organise ideas and how does it help you to write your essays?
3. Which aspects of essay writing do you think are important and why?
4. Do you often edit drafts and why?

Students understanding of the importance of academic essay writing in their studies

1. Do your lecturers explain the importance of writing essays?
2. Are the writing activities linked to study skills (summarise, note-taking, concept/mind map)?
3. Do the lecturers illustrate the value of writing activities, if so, how is it done?
4. Is there anything else you want to share that we have not talked about yet?

Thank You!

APPENDIX F: DOCUMENT ANALYSIS SCHEDULE: STUDENTS' ESSAYS

	4 - Exceeds Expectations	3 - Meets Expectations	2 - Needs Improvement	1 - Inadequate	Score
Understanding of Audience		Demonstrates a keen understanding of the target audience and uses appropriate vocabulary and language. Anticipates probable questions and addresses these concerns with evidence pertaining to probable potential readers.	Demonstrates a general understanding of audience and uses mostly appropriate vocabulary and language structures.	Demonstrates a limited understanding of audience, and generally uses appropriate, if simple, vocabulary and language.	Not clear which audience is intended for this writing.
Hook / Introduction		Introductory paragraph begins with a statement that both grabs the attention of the reader and is appropriate to the audience.	Introductory paragraph begins with a statement that attempts to grab the attention of the reader, but is incomplete in some sense, or may not be appropriate to the audience.	Introductory paragraph begins with a statement that might be construed as an attention getter but is not clear.	Introductory paragraph does not contain a hook or attention grabber.
Theses / Main Idea Structuring		Introductory paragraph contains a clear thesis of main idea with clear suggestions as to how the body of the essay will support this thesis.	Introductory paragraph contains a clear thesis. However, the following support sentences are not necessarily, or only vaguely connected to the body paragraphs.	Introductory paragraph contains a statement that may be construed as a thesis or main idea. However, there is little structural support in the following sentences.	Introductory paragraph contains no clear thesis statement or main idea.
Body / Evidence and Examples		Body paragraphs provide clear evidence and	Body paragraphs provide clear connections to	Body paragraphs are vaguely on topic, but lack	Body paragraphs are unrelated, or

	ample examples supporting thesis statement.	thesis statement but may be need more examples or concrete evidence.	clear connections, evidence and examples of thesis or main idea.	marginally connected to essay topic. Examples and evidence are weak or non-existent.
Closing Paragraph / Conclusion	Closing paragraph provides a clear conclusion successfully stating the author's position, as well as containing an effective restatement of the main idea or thesis of the essay.	Closing paragraph concludes essay in satisfactory manner. However, author's position and / or an effective restatement of main idea or thesis may be lacking.	Conclusion is weak and at times confusing in terms of author's position with little reference to main idea or thesis.	Conclusion is non-existent with little or no reference to proceeding paragraphs or author's position.
Sentence Structure	All sentences are well constructed with very few minor mistakes. Complex sentence structures are used effectively.	Most sentences are well constructed with a number of mistakes. Some attempts at complex sentence structure are successful.	Some sentences are well constructed, while others contain serious errors. Use of complex sentence structure is limited.	Very few sentences are well constructed, or sentence structures are all very simple.
Linking Language	Linking language is used correctly and often.	Linking language is used. However, mistakes in exact phrasing or usage of linking language is evident.	Linking language is seldom used.	Linking language is almost never or never used.
Grammar and Spelling	Writing includes no or only very few minor errors in grammar, spelling.	Writing includes a relatively small number of errors in grammar, spelling, and punctuation. However, reader's understanding is not impeded by these errors.	Writing includes a number of errors in grammar, spelling, and punctuation which, at times, hinders reader's understanding.	Writing includes numerous errors in grammar, spelling and punctuation which makes reader's understanding difficult.

APPENDIX G: OBSERVATION CHECKLIST

Date of Observation……………………………..

Course Name……………………………………

Instructor………………………………………

Students' Names…………………………………

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Topic……………………………………………………………………………………

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Notes on classroom environment:

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of students being observed:

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Adapted from Lane E, S & Harris, E. 2015. Anew tool for measuring student behavioural engagement in large University classes. Journal of College Science Teaching,44(6)

APPENDIX H: PHASE 2 FOCUS GROUP INTERVIEW PROTOCOL

Phase 2: Focus group interview protocol questions after the training of PBL-MT model

Title:

Integrating PBL and MT to enhance student writing in English Second Language (ESL) contexts: a case study of University of Limpopo in South Africa.

Research Question:

How can an integrated PBL-MT model enhance students' academic essay writing competencies in an ESL context?

Purpose of the study:

The purpose of this study is to explore the effectiveness an integrated PBL-MT model that can enhance students' academic essay writing competencies in ESL context.

Introduction:

Good day, my name is Morongwa Choshi. I am here to talk to you about your experiences of essay writing using PBL and MT. Your personal reflections and thoughts are crucial for the purpose of this study. I have compiled the questions which I will ask, and they are categorised into themes. The focus of the questions will be related to how you wrote essays using the PBL-MT model. Your name and the information given to me will be kept secret.

I will use a tape recorder to tape our conversation. Please, be relaxed in answering as there is no correct answer. The correct answer is what you think and what you want to say. Lastly, give each other chance to respond to the question asked.

Questions:

Students' experiences of writing group essay

1. People apply many different meanings to the word 'collaboration'. What do know about it?

2. I observed that you wrote essays in groups using MT. What is it that you liked the most about writing essays in such context and why?

3. What is it that you disliked about writing essays using PBL technology and why?

4. Did you ever write essays in groups? If so, how was it like?

Students' attitude towards writing

1. Did you like writing essays using PBL and technology and why?

2. Did you have confidence of sharing information with your group members using technology and how did you display your confidence?

3. What was the attitude of your group members towards collaborative writing involving technology and why?

Students' collaborative writing habits

1. Did you take responsibilities during collaborative essay writing and how?

2. Did you have sufficient opportunity to interact and collaborate with one another and how?

3. How did you compile the whole essay?

Students understanding of how the PBL-MT model can enhance their essay writing competencies

1. Did the process of writing essay using PBL-MT model allow you to acquire pedagogical skills for teaching and how?

2. Does writing essay in PBL-MT context encourage active participation and networking with fellow students and how?

Thank You!

APPENDIX I: TURNITIN REPORT

Attached separately