

**INTEGRATING MOBILE APPS TO ENHANCE MULTILITERACY IN
ENGLISH LANGUAGE EDUCATION**

by

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in the

FACULTY OF EDUCATION

at the

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To my incredible mother, Marlene May Cloete,
who made me realise the beauty and power of words, and my immense passion for
literature. When the words failed you, I decided that I would use my words to speak
for you. Your profound stories and our many trips to the library enabled me to
achieve this – thank you Mommy.

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multiliteracy in English language education.

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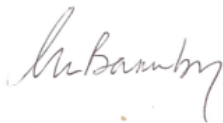
INTEGRATING MOBILE APPS TO ENHANCE MULTILITERACY IN ENGLISH
LANGUAGE EDUCATION

by

Tracey-Leigh Cloete

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Abstract

English language education has continued to be a challenge in the South African teaching context. The majority of the South African population does not speak English as their mother tongue, yet the medium of instruction in most educational institutions is English. With the enhancement of technology, teaching methods have evolved to include the utilisation of technology such as mobile apps, presenting an opportunity to enhance teaching pedagogies and cater for various learning styles. This research focused on how to integrate technology successfully into teaching pedagogy to effectively enhance multiliteracies. The purpose of this study was to investigate the teaching methods utilised by educators in promoting multiliteracy using mobile apps, as well as to explore their beliefs in this regard and the way in which these aspects can improve English language education. The main research question asked was ‘How does the integration of mobile apps in the English language lesson enhance multiliteracy?’, while the sub-questions included ‘What are teachers’ beliefs/perceptions about integrating technology using mobile apps?’ and ‘What strategies do teachers employ when integrating mobile apps to enhance multiliteracy?’ This study applied interpretivism as a paradigm, a qualitative research approach and a descriptive case study. The data collection tools utilised were semi-structured questionnaires and secondary data from De Jager’s (2018) study. A deductive thematic analysis was conducted after emergent coding had been carried out. The data were then assigned to categories and were mapped onto the four pillars of multiliteracy and checked for meaning. The findings revealed that mobile apps have the potential to enhance multiliteracies in English language education, as well as to foster an overall positive attitude and a willingness to learn more about the utilisation of mobile apps and technology to enhance teaching pedagogies on the part of educators. The study also revealed, however, that educators did not reach the point of redefinition/transformation in the use of mobile apps to enhance English language education.

Key terms:

communicative competence, inquiry groups, multiliteracies, social constructivism, technology integration, TPACK, translanguaging, zone of proximal development

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List of abbreviations

CAPS	Curriculum and Policy Statement
ESL	English Second Language
ICT	Information and communication technology
IG	Inquiry groups
LoLT	Language of learning and teaching
ML	Multiliteracies
SAMR	Substitution, Augmentation, Modification and Redefinition
TPACK	Technological pedagogical content knowledge
ZPD	Zone of proximal development

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CHAPTER 1

GENERAL ORIENTATION

1.1 INTRODUCTION

The teaching of the English language is a challenging aspect of South African education. This pertains to the teaching of English as a Home Language, English as a First Additional Language, and English as a Second Additional Language, as well as the use of English as the language of learning and teaching (LoLT). The use of English as the LoLT in multilingual education in South Africa is common, and “its often deleterious impact on the academic achievement of English second language (ESL) learners in linguistically diverse schools” (Hinkel 2011, cited in Lemmer & Manyike, 2014:251) is a matter of concern. This has been a major challenge in promoting equity in education, as South African schooling has not been able to effectively assist “learners who are learning English as an additional language and using it as medium for the mastery of all other learning areas” (Lemmer & Manyike, 2014:251). In addition, there has been an increase in the utilisation of mobile apps for language education (Gangaiamaran & Pasupathi, 2017:11242). While the use of mobile apps has become more commonplace, it is not known whether these apps are being utilised effectively to make a meaningful difference to improve subject knowledge in English language classrooms.

The focus of this study was on the effects that the integration of apps has on enhancing multiliteracy in English language education. The purpose was to investigate how to promote a more multiliterate environment using apps and, in turn, improve English language education. I hope that this dissertation will provide insight into the teaching and learning of English in the South African context, direct focus onto how educators can collaborate and utilise apps to improve English language and teaching, and how the use of apps can enhance multiliteracy in English education.

1.2 BACKGROUND AND CONTEXT

English language education has been an ongoing challenge in the South African schooling context. Not only is English language education of concern, but also the use of language in teaching as a whole, as the use of English as the LoLT has an impact

on learners' academic results (Lemmer & Manyike, 2014:251). South Africa is linguistically diverse, as it is a country with many official languages, and there is therefore a need to investigate how English language education can be improved (Lemmer & Manyike, 2014:251).

Most South African learners do not speak English as their mother tongue (Lemmer & Manyike, 2014:251). Despite this, the majority of schooling in South Africa is conducted using English as the LoLT. As such, educators are mainly trained to present lessons in English, with African languages being neglected as academic languages of instruction (Balfour & Mkhize, 2017:134). In this study, the study site was a microcosm of the cultural and linguistic diversity in South Africa, as the school is comprised of learners from backgrounds that are culturally and linguistically diverse, and the main LoLT is English. The study site was a private school that is well-resourced and embraces diversity and inclusivity, where most learners come from a middle or upper-class socioeconomic background. Most learners also have access to mobile phones, allowing for the utilisation of mobile apps. The study site therefore provided an ideal opportunity to assess the manner in which mobile apps can be used to enhance multiliteracy in English language education.

The successful utilisation of apps provides a unique opportunity in English language education. Mobile devices have become commonplace among learners, and it is therefore a medium that is highly accessible, resulting in it becoming a vital tool in education (Gangaiamaran & Pasupathi, 2017:11242). As a result of the Covid-19 pandemic, the use of technology and mobile apps has become essential for remote learning, but the use of apps has also been exploited (overused in inadequate ways as an ICT tool) and not utilised effectively (Hankins, Irudayasamy & Yantandu, 2021:43). Traditional schooling methods are being incorporated into technological methods, and there is therefore a need for educators to learn how to not simply use the apps to deliver content, but to transcend content delivery and allow for effective pedagogical methods (Chai, Koh & Teo, 2019:361). In other words, an enhancement in the use of apps in English language education is necessary. Focusing on the use of apps to expand multiliteracy and improve English language education is therefore crucial to creating more successful learning environments.

It is vital that student teachers and professional educators are able to effectively utilise apps in the classroom, as the aim is to enhance multiliteracy and collaboration in the classroom, thereby improving English language education. Of great significance here is collaborative learning and Vygotsky's "zone of proximal development (ZPD), which describes the difference between (a) what the learners can learn on their own and (b) what they can learn under the guidance of a facilitator or others in the learning environment" (Clapper, 2015:150). Students and learners alike construct knowledge much more effectively when collaborating with others. Cooperative learning pertains to the understanding that an individual may experience difficulty in areas where other individuals may be of assistance, and may possess strengths that other members may not (Johnson & Johnson, 1975, cited in Clapper, 2015:151). Technological, pedagogical and content knowledge (i.e. TPACK) is also of concern, as educators need to understand how to assist learners to reach the required level of knowledge construction through the use of apps (Chai et al., 2019:361). Cooperative learning and TPACK were a crucial part of this study, as they not only enhance multiliteracy, but also present an opportunity for educators to integrate apps effectively to enhance English language teaching.

1.3 RATIONALE AND MOTIVATION

Although technology has made major advancements in education in the past century, it has also changed the way in which pedagogical and epistemological assumptions are incorporated in the classroom (Collins & Halverson, 2010; Geisinger, 2016, cited in Chai et al., 2019:361). Traditional schooling is being duplicated and spread through the use of technology, and the pedagogical practices of educators therefore require transformation that transcends effective content delivery (Chai et al., 2019:361). Although a vast selection of apps is available, they are not being utilised optimally to achieve the desired results. Although educators are making an effort to use apps in the classroom, they are not successfully incorporating the use of technology with established pedagogical theories – this is needed to transcend the use of apps in simply providing content.

As an English Home Language high school educator, it has become apparent to me that despite the extensive use of technology in the classroom, teaching methods and learners' results in the subject have not shown significant improvement. Of particular

importance is the fact that it would seem that apps are not being effectively utilised in the classroom environment, and as an English Home Language educator, I have found this to be apparent in the results of learners and the perceptions of colleagues. As a scholar, I have realised that there are challenges when it comes to utilising apps effectively – in a way that creates an improvement in learning. It has been noted that schools have been amalgamating traditional and advanced technological methods in an attempt to advance education; however, educators require assistance in learning how to implement strategies that transcend the use of apps to deliver content and, instead, utilise apps to transition to new pedagogical methods that are more effective (Chai et al., 2019:361). Insight into how apps can be utilised with greater effect to improve multiliteracy, and in turn, English language education, is therefore needed. I would like to use this study to make a meaningful difference in English education and the use of mobile apps to enhance multiliteracies in the classroom, as I believe that this is a highly relevant issue.

On a professional level, I have realised that the classroom environment lacks inclusivity and does not cater effectively to the differing needs of learners. The issue of creating a more inclusive classroom environment has always been my passion and motivated me to make a difference in education as an English educator, as I believe that every learner has the right to feel accommodated and be appreciated for their uniqueness and the different skillsets that they bring to the classroom. I also have a passion for making education as relevant to learners' lives as possible, in order to provide a relevant and effective education as a teacher. The need for me to address these aspects has therefore motivated me to conduct research on how to utilise mobile apps to enhance multiliteracies in English education. In addition, on a personal level, I wish to become an academic who specialises in this area and develop as an educator and researcher.

I hope that this study will provide insight into how apps can be used more effectively to create a more inclusive learning environment, and improve English language teaching and learning. I also anticipate that the study will enlighten educators as to why the current utilisation of apps is not optimal when it comes to multiliterate teaching in English education. There is a need for additional research in this area, as the South African context demands a multiliterate environment that embraces the diversity of

languages in the classroom. It has also become evident that as a result of the Covid-19 pandemic, mobile apps have now become essential for remote learning, yet these apps are not being implemented in a way that enhances effective traditional teaching methods (Hankins et al., 2021:43). The problem statement derived from this is therefore as follows: Mobile apps are not being utilised effectively by teachers to enhance multiliteracy in English language education. In addition, the rationale and motivation for this study is therefore to investigate the use of apps to enhance English language education and multiliteracy, whilst embracing collaborative learning.

1.4 FOCUS

The focus of this dissertation is on the effects that the integration of mobile apps has on enhancing multiliteracy in English language teaching and learning environments.

1.5 PURPOSE

The purpose of this dissertation is to investigate what strategies and beliefs are utilised by teachers in promoting multiliteracy in the classroom through the use of mobile apps and, in turn, how to improve English language education.

1.6 RESEARCH QUESTIONS

Main question:

- How does the integration of mobile apps in the English language lesson enhance multiliteracy?

Sub-questions:

- What are teachers' beliefs/perceptions about integrating technology/using mobile apps?
- What strategies do teachers employ when integrating mobile apps to enhance multiliteracy?

The above research question and sub-questions assisted in achieving my research purpose as they enabled me to investigate how the utilisation of apps could broaden the reach of multiliteracy in English language education, whilst improving English language education itself. The research question and sub-questions ensured that the

focus was on the most important aspects, namely, apps, multiliteracy and English language education.

1.7 OVERVIEW OF THE LITERATURE

1.7.1 Introduction

The use of English as the language of learning and teaching (LoLT), and teaching English as a Home Language, English as a First Additional Language and English as a Second Additional Language, have become an area of concern in the South African education system. South Africa is comprised of a linguistically diverse population and many learners do not utilise English as a language of primary communication (Lemmer & Manyike, 2014:251). Most of the South African population speak languages besides English, but English continues to be the dominant language used in public domains (Balfour & Mkhize, 2017:133). The prevalence of English usage challenges the language rights of non-English-speaking citizens, “as enshrined in the Constitution of the Republic of South Africa (1996) and other legislative frameworks” (Balfour & Mkhize, 2017:133). Many studies have suggested that underachievement in South African schools is linked to learners being instructed in a language that is not their home language (Jordaan, 2017).

The effective utilisation of mobile apps in English language education is central to improving teaching methods (Hankins et al., 2021:52). The use of mobile apps, and not only devices such as computers, is becoming an area of focus (Hankins et al., 2021:52). The available literature also places an emphasis on using technology in the teaching of English as a First and Second Additional Language, and effectively teaching English as a Home Language to learners in schools that only offer it as a Home Language (Hankins et al., 2021:52). This is important in the South African context, as many English government schools only offer English as a Home Language, which is compulsory, yet many learners do not use English as their mother tongue.

It is apparent that research “into the development of indigenous African language teaching models, particularly with regard to the maintenance of HL and the introduction of additional languages” (Lemmer & Manyike, 2014:256) is lacking. This problem exists as educators are mainly trained to present lessons in English, and “African languages do not have histories as academic languages in higher education” (Balfour

& Mkhize, 2017:134). By acknowledging the importance of African languages, and the need to address African languages when instructing learners, teaching English as a subject to learners who have a different mother tongue will become more effective. Language apps that support the use of African languages, for example, could be used when instructing learners in the subject of English.

Advocating for technological activities in the classroom setting may allow for the generation and improvement of communicative competence and speaking skills (De Jager, 2018). The use of technology may also narrow the gap between traditional pedagogies of language teaching and the learning preferences of technologically inclined learners when it comes to language learning (De Jager, 2018). In addition, the utilisation of apps may promote the enhancement of language learning and improve education.

1.7.2 Social constructivism

Reagan (2009, as cited in Jordaan, 2017) maintains that language learning and learning theories can be considered as “metaphors which are culturally determined cognitive tools that shape our thoughts” (Jordaan, 2017). Although science has allowed for advances in understanding about how the human brain learns, there are still gaps in our understanding of how knowledge is effectively applied in the classroom setting (Jordaan, 2017). Social constructivism offers a way to enhance language education through the use of metaphors (Jordaan, 2017). Vygotsky (1978) proposed the theory of social constructivism which holds that knowledge is formed in interacting with others and through dialogue (Churcher, Downs & Tewksbury, 2014:35). “The use of language between individuals in an environment as an interpsychological tool is central to social constructivist thought on the learning process” (Churcher et al., 2014:35). Effective learning results in an intrapsychological tool, which can be utilised in future situations (Marsh & Ketterer; Vygotsky, cited in Churcher et al., 2014:35). This scaffolding forms part of the learner’s memory and can be utilised by the learner at a later stage in order to comprehend various situations (Churcher et al., 2014:35). The incorporation of mobile apps into English lessons will allow learners to collaborate effectively, building on one another’s knowledge systems about effective teaching methodologies to enhance multiliteracy.

According to the Curriculum and Policy Statement (CAPS), the CAPS curriculum aims to allow learners to “acquire and apply knowledge and skills in ways that are meaningful to their own lives. In this regard, the curriculum promotes knowledge in local contexts, while being sensitive to global imperatives” (Department of Basic Education, 2011a). The curriculum therefore advocates for a constructivist approach to learning, where learners negotiate meaning and knowledge with peers. In such a social constructivist setting, learners’ languages become a rich source for creating an inclusive classroom environment and a source of diversity in the classroom. Learners are able to interpret content in their own languages, thereby grasping the knowledge to a greater extent.

1.7.3 Multilingualism

Multilingualism in education has a number of cognitive, societal and academic advantages, and the linguistic diversity that exists in South Africa affords learners the opportunity to become linguistically advanced in their home language, and additional languages (Jordaan, 2017). “Multilingualism refers to different languages spoken in a particular community, as well as language competencies in a variety of languages” (Desai, 2003; Prah, 2006; Burcu, Fannin, Montanera & Cummins, 2014, cited in Katiya & Nomlomo, 2018:80). South Africa is considered a multilingual country, with 11 official languages. Most learners are not mother tongue speakers of English, and CAPS advocates additive bilingualism to promote a multilingual classroom that views all learners’ home languages as an asset. Multilingualism is also linked to translanguaging, another key concept in this study, because it supports the effort of translanguaging to create a shift from monolingual philosophies to the dynamic insights of multilingualism (Cenoz & Gorter, 2020:300). Aside from the need to include a variety of languages in the classroom, multiliteracy also involves utilising methods that reflect other views besides those that can be drawn from the dominant language and culture (Sang, 2017:16).

1.7.4 Translanguaging

Knowledge on translanguaging pedagogies and how to deal with language and content simultaneously could assist in addressing the challenges faced by learners whose mother tongue is not English. Translanguaging “reflects the shift from

monolingual ideologies and dynamic views of multilingualism”, thereby advocating for a multilingual classroom environment (Cenoz & Gorter, 2020:300). Translanguaging therefore encourages learners and teachers to embrace multilingualism in teaching pedagogies. The effective integration of translanguaging pedagogies into English language education could help learners overcome the language barriers in the classroom (Balfour & Mkhize, 2017:134). Translanguaging pedagogies embrace the use of multiple languages in the classroom (Balfour & Mkhize, 2017:134). In other words, it involves utilising learners’ home language to teach content. Translanguaging is crucial for creating a multilingual classroom environment and so assisting learners to become multiliterate. Translanguaging can also assist learners with communicative competence, as it will enable them to use language correctly and communicate effectively (Study.com, 2019). The current models utilised for such purposes are derived from second language teaching designs of Western origin which do not take into account the South African context (Lemmer & Manyike, 2014:256). Western models of education do not consider learners who speak one of the African languages as a home language, and the various apps that are available for use by educators were developed within a Westernised context. South Africa faces different challenges and embraces a different heritage to Westernised countries, and the creators of apps have an obligation to acknowledge the South African context. There is therefore a need to make such Western models of language teaching and acquisition applicable and relevant to the South African classroom environment. In addition, a clear link between theory and practice needs to be evident to be able to implement the necessary principles for enhancing multiliteracy through translanguaging in the classroom.

1.7.5 Multiliteracies

Multiliteracies comprise overt instruction, situated practice, critical framing and transformed practice (Engelbrecht & Genis, 2019:7–8). A multiliteracies framework focuses on the use of various methods and modes of teaching in the classroom (multimodalities), including aural, gestural, visual, kinaesthetic and technological methods (Engelbrecht & Genis, 2019:29). The aim of integrating apps into the English classroom is to enhance multiliteracy in English education, thereby improving the teaching of English. The integration of apps will allow for multimodal lessons, as

technology promotes various methods of learning, and caters to learners' various learning styles (e.g. visual and aural learners). This will also complement the use of translanguaging in the classroom, as translanguaging can be used to promote learners' understanding of content knowledge and develop their language skills, enabling them to function in a modern, 21st-century world. The language skills individuals need to participate successfully in current society are ever-changing and new forms of literacy are now needed (Sang, 2017:16).

Mobile apps for language education are becoming more common (Gangaiamaran & Pasupathi, 2017:11242). Although a great deal of research and literature is available on the utilisation of apps to improve English language and teaching and enhance multiliteracy, there is a need for “a link between school-based research, institutional support and teacher training” (Lemmer & Manyike, 2014:256), so that research on language in the field of education can have the necessary impact on South African schools (Lemmer & Manyike, 2014:256).

1.7.6 Cooperative learning

In a social constructivist classroom, cooperative-based learning activities that involve techniques that promote “intentional learning activities where learners work together to achieve common learning objectives” are advocated (Barkley et al., cited in Clapper, 2015:151). Cooperative learning is a teaching/learning method that entails the use of small groups which allows individuals to work on tasks together, thus maximising their own learning through group participation (Sukmawati, Pramita, Santanapurba & Utami, 2020:75). This is in line with Vygotsky's (1978) zone of proximal development which focuses on a learner-centred approach that allows learners to apply both internal reflection and speech to transform or develop certain behaviours (Clapper, 2015:150). These activities are facilitated by the use of tools and resources (Clapper, 2015:150) such as apps. When learners experience challenges in assimilating new frames of knowledge with current frames, assistance from peers or educators is made available (Clapper, 2015:150).

Cooperative-based learning, together with Vygotsky's (1978) zone of proximal development, are important aspects in effective English education and multiliteracy. The relationship between these two aspects and how they can be effectively utilised

through the use of technology to transform teaching practice, is the focus of this study (Clapper, 2015:149). For example, the use of technology such as simulation in teaching can be more effective when cooperative learning and the zone of proximal development are effectively linked to it (Clapper, 2015:149). Research shows that cooperative learning serves to prepare individuals to engage in teamwork in the working world, making cooperative learning a preparatory method for coping in the world of work and not only at an educational level (Sukmawati et al., 2020:75). Vygotsky's zone of proximal development and cooperative learning will be core aspects of the study – focus will be placed on instructional methods that allow learners to create their own knowledge systems under an educator's guidance, as well as through collaboration with others (Clapper, 2015:150). Because of the focus on cooperative learning in this study, inquiry groups are central. Inquiry groups involve periodic meetings between group members that may be conducted online or in person over a specific period of time (Northeastern University, 2022). Cooperative learning is linked to inquiry groups, as such groups are conducive to cooperative-based learning activities – individuals work together to attain certain goals (Barkley et al., cited in Clapper, 2015:151). The integration of technology, specifically apps, can assist learners and educators to communicate with one another, even outside the classroom (if learners need additional assistance, for example), through the utilisation of apps like Microsoft Teams.

1.7.7 Communicative competence

Communicative competence is “the ability to use language correctly to communicate appropriately and effectively in a variety of social situations” (Study.com, 2019). Communicative language education is aimed at allowing individuals to communicate effectively with one another (Galajda, 2012:143). It is comprised of “the linguistic, paralinguistic, extralinguistic (i.e., non-verbal), and sociolinguistic components” (Fantini, 2020:31–38) and was introduced and used widely in language education over forty years ago to pinpoint the array of “dimensions involved in competent communication in any language-culture” (Fantini, 2020:53). Individuals are therefore “perceived as social beings who communicate in a particular social and cultural reality and not only in the classroom context” (Galajda, 2012:143). In De Jager's (2018) study, the educators involved continuously applied communicative competence when

communicating with one another about their usage of mobile apps in the classroom. Communicative competence is a crucial part of every aspect of teaching and learning, and teaching and learning cannot occur effectively without acknowledging this. This study focuses on the use of mobile apps to enhance multiliteracies in English education; accordingly, such apps need to be conducive to communicative competence. It is the English educator's task to help learners achieve communicative competence. Furthermore, as communicative competence allows for the use of a variety of learning styles in the English language classroom, multiliteracies cannot be enhanced without it. Consequently, the aim is for educators to discover ways to improve the efficiency of mobile app use when teaching English language. In De Jager's (2018) study, the educators were given the opportunity to use an online platform to communicate the effectiveness of mobile app utilisation, enabling them to share ideas and seek assistance from one another.

1.7.8 Technology integration in teaching English

Shulman (1987) introduced the term "pedagogical content knowledge" in 1987 – the term conceptualised the knowledge of the educator as underpinning education expertise (Voogt & McKenney, 2017:70). In 2006, Mishra and Koehler "introduced technological pedagogical content knowledge (TPACK) as a framework for conceptualising the teacher knowledge needed for appropriately teaching with ICT" (Voogt & McKenney, 2017:70). In this study, the integration of technological knowledge formed a primary component, as educators had to incorporate mobile apps effectively into the learning experience to enhance multiliteracy in English language teaching. Focus on the TPACK framework enabled educators to understand the ways in which one can mould educational practices, where "technological, content and pedagogical knowledge are embedded" (Voogt & McKenney, 2017:70).

Education has moved towards a more learner-centred teaching style, where learners have to construct their own knowledge. Self-regulated learning has thus become an important aspect of teaching and learning and could be achieved through the use of mobile apps (Gangaiamaran & Pasupathi, 2017:11249). A focus on "how mobile apps can be studied with the perspective of self-access learning" (Gangaiamaran & Pasupathi, 2017:11249) places learners in control of what and how they learn through the use of apps (Gangaiamaran & Pasupathi, 2017:11249). In order to promote a

learner-centred approach, Vygotsky's (1978) theory of social constructivism and the theory of cooperative-based learning need to be incorporated into lessons, as these two theories advocate for learners to construct their own knowledge.

Although the Department of Basic Education (DBE) has mandated the integration of technology into teaching and learning, limited access to technological devices and internet connections in rural schools remains a challenge for many teachers and learners. Multiple research studies on technology integration address Western regions and developed countries like the United States of America, but South Africa is a developing country and as such lacks the resources of Western countries. Underdeveloped and poorer countries, like South Africa, need to find efficient ways to incorporate mobile apps into education (Gangaiamaran & Pasupathi, 2017:11249). More emphasis should be placed on utilising off-line mobile apps, where internet access is unavailable or limited, and the way in which off-line apps can help bridge the gap between learners' educational experience in poorer and wealthier learning environments (Gangaiamaran & Pasupathi, 2017:11249).

In addition to the challenge mentioned above, schools in rural areas face additional problems such as teachers with a lack of content knowledge and literacy skills, poor use of the learning materials available and the ineffective use of teaching methods (Jordaan, 2017). Another aspect that hampers effective technology integration is the anxiety that educators experience when having to utilise technology like mobile apps in teaching (Gangaiamaran & Pasupathi, 2017:11249). Many educators are used to traditional paper-based methods of teaching, and become less confident in their teaching methods when having to incorporate technology. Teachers face challenges such as not knowing how to integrate technology properly and these challenges have to be overcome when applying technology in English language education (Gangaiamaran & Pasupathi, 2017:11249). The anxieties faced by professional educators also applies to student teachers, who are even less confident in the utilisation of technology to enhance teaching. Focused attention on how tertiary institutions train student teachers in the efficient use of technology in education may alleviate these challenges (Voogt & McKenney, 2017:69). If apps are effectively incorporated into the lesson, educators will be able to relate the content to learners, create interest in lessons, and promote a more multiliterate learning environment.

Knowledge of the appropriateness of technology for different age groups, and at what age learners can most effectively utilise technology like mobile apps to enhance their learning, may also assist in improving English language education (Gangaiamaran & Pasupathi, 2017:11249).

Research has indicated that there is a need for technology in the classroom, but literature dealing with how to effectively utilise that technology in the field of technological pedagogical content knowledge and methodologies is lacking (Chai et al., 2019:361). However, focusing on the link between constructivism (learner-centred teaching methods) and the use of technology to enhance such methods may provide ways to attain a successful learning approach. Aspects such as “authentic learning (AUL), collaborative learning (COL), reflective learning (RL), and active and constructive learning (ACTL)” (Chai et al., 2019:363) are also critical dimensions to consider when it comes to education in a modernised world (Chai et al., 2019:363). The effective utilisation of technology to facilitate the mastery of content through such teaching methodologies can lead to effective teaching and learning (Chai et al., 2019:363).

Creating an effective learning experience through the use of mobile apps, where learners effectively engage with the apps and do not misuse them, may promote efficiency in learning. Student feedback should be incorporated in the literature so that it may be ascertained what is and what is not effective when it comes to pedagogy for app integration in lessons (Churcher et al., 2014:45). The pedagogical relevance of incorporating apps into education may provide ways to link traditional and modern teaching methodologies (Churcher et al., 2014:46).

1.7.9 Conclusion

The main limitations of the literature on the topic of technology integration for multiliteracies include contextual weaknesses (e.g. the use of Westernised as opposed to local strategies and overcoming the lack of technological resources), methodological weaknesses (such as the effective link between various pedagogies and technology) and conceptual weaknesses (e.g. the true effectiveness of apps designed to teach English language from a Western and not South African perspective). Effective teaching of English, African language teaching models, the

incorporation of multiliteracy to promote diversity in the South African classroom setting (while incorporating theoretical frameworks like social constructivism, Vygotsky's zone of proximal development and TPACK) and how to utilise apps effectively in South Africa (as a developing country with various mother tongues) requires focused attention. This research study may contribute to the existing knowledge base on technology integration in order to promote multiliteracy in the classroom.

1.8 THEORETICAL/CONCEPTUAL FRAMING

After having done an initial reading of the pertinent literature, I decided to apply particular concepts/theoretical frameworks in this study. The overarching theoretical framework that was used for the purposes of this study was Vygotsky's (1978) social constructivist theory, and within this theory, Vygotsky's zone of proximal development (ZPD). In addition, technological, pedagogical and content knowledge (TPACK) (Mishra & Koehler, 2006) was incorporated as a framework to enhance multiliteracies (NLG, 1996). These concepts formed the conceptual framework which guided the study.

Figure 1.1 is a visual representation of the conceptual framework chosen for the study:

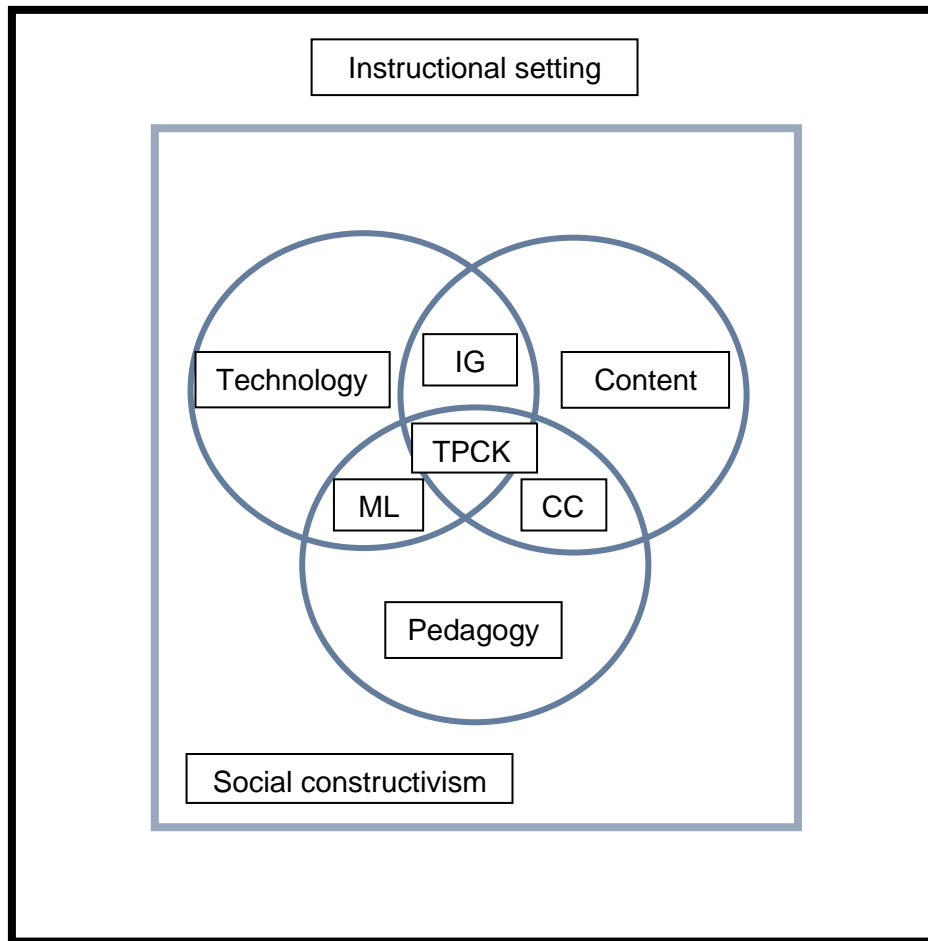


Figure 1.1: Conceptual framework

Source: Adapted from De Jager, 2018

Key: IG = Inquiry groups, TPCK = Technological pedagogical content knowledge
 ML = Multiliteracies, CC = Communicative competence

Within the instructional setting of the learning environment, social constructivism (Vygotsky, 1978) was utilised as a core theoretical framework. Utilising this framework ensured that the study maintained a focus on enabling and encouraging participants to build on their own knowledge and assimilate new knowledge into their current knowledge (scaffolding) (Vygotsky, 1978). This also guided the manner in which I worked with the participants, as I ensured that I did not simply provide knowledge but also allowed participants to participate in the construction of their own knowledge. Working within the realm of social constructivism, focus was placed on the use of mobile apps, and how apps can be utilised to enhance the teaching of content and outdated teaching pedagogies through the use of the TPACK framework (Mishra & Koehler, 2006). The use of the TPACK framework sustained the focus on technology in this study and the role that it plays in transforming current teaching pedagogies. Educators built on the way they teach content through the use of apps by means of

cooperative-based learning, with a focus on communicative competence as the outcome of language teaching (Hymes, 1972). Focusing on communicative competence attains the goal of creating communicative competence between learners and educators in the classroom environment. The introduction of apps into teaching methods and pedagogy results in transformed practice, leading to enhanced multiliteracy, because a multiplicity of modalities are included in the classroom.

1.9 RESEARCH METHODOLOGY

1.9.1 Research paradigm

A paradigm is made up of “ontology, epistemology, methodology, and methods.” (Scotland, 2012:9). The paradigm on which a study is founded upon is a specific viewpoint on social reality (Maree, 2016:52).

Ontology is concerned with reality and what constitutes reality – it questions what reality can be classified as (Scotland, 2012:9). Epistemology encompasses the nature and types of knowledge evident (Cohen et al., 2007, cited in Scotland, 2012:9). Key ontological questions include whether or not social reality can be considered as existing independently from human assumptions and interpretations, whether or not there is a unified, shared social reality, or varied, context-specific realities, and whether social behaviour is controlled by generalisable “laws” (Maree, 2016:57).

As opposed to ontology, epistemology focuses on how things are known – how truths can be discovered and determined (Maree, 2016:67). Epistemological assumptions explore the nature of knowledge creation, and how knowledge is gained and communicated (Scotland, 2012:9). Epistemology involves three core arguments – the first debate is the relationship evident between the researcher and the participants, and the effects of this relationship on the objectivity of the researcher (Maree, 2016:67). The second debate involves the objectivity of knowledge – the dilemma is whether knowledge is objectively or subjectively determined (Maree, 2016:67). The third debate involves the question of whether or not research findings can be generalised (Maree, 2016:68).

Axiology is concerned with the characteristics of values and what one considers to be valuable (Hart, 1971:29), for example one associates varying degrees of value with

passions, interests and actions (Hart, 1971:29). The primary concern of axiology is the evaluation of the role played by the researcher's individual values in every stage of the research process (Li, 2016, cited in Business Research Methodology, n.d.). The paradigm used for the purpose of this study was interpretivism, as I believe that research is value-laden, and that the researcher is subjective and forms part of the research (Business Research Methodology, n.d.).

Interpretivism is an epistemology that is subjective and founded on real-world phenomena (Scotland, 2012:11). It assumes that "meaning is not discovered; it is constructed through the interaction between consciousness and the world" (Scotland, 2012:11). Interpretivism is based on a multitude of assumptions, one being that human life is only comprehensible from within, and cannot be viewed from an external reality (Maree, 2016:61). Another assumption is that social life is a result of human beings, and that people should be observed in their social contexts in order to comprehend their perceptions (Hussey & Hussey, 1997, cited in Maree, 2016:61). A third assumption is that the human mind forms the foundation of meaning – by discovering how individuals construct meaning, one can gain insight into the meanings imparted and comprehension as a whole (Maree, 2016:61). The next assumption is that human behaviour is influenced by information from the social world – social theory holds that this has an impact on the way one comprehends issues, and this assists one in making sense of the world (Maree, 2016:62). Lastly, interpretivism assumes that the social world cannot "happen" independently from human knowledge – a researcher's own knowledge and comprehension of phenomena have an ongoing effect on the way that the researcher conducts research, thus introducing the aspect of subjectivity (Maree, 2016:62).

I conform to interpretivism as an epistemological perspective, as I believe that meaning is constructed through interaction with others (Scotland, 2012:11). In this study, the interaction among teachers is crucial in their utilisation of mobile apps and their construction of knowledge on how to integrate these apps to enhance English language education and multiliteracy. As such, the study is further guided by social constructivism.

The theory of social constructivism was founded on the work of Vygotsky (1978) and is based on the premise that knowledge is constructed through interaction with other

individuals (Churcher et al., 2014:35). It maintains that knowledge is formed through co-construction which takes place via social interaction. During this interaction, individuals utilise language as a tool to construct meaning – language is therefore used as an interpsychological tool (Churcher et al., 2014:35). The outcome of successful learning is considered to be the formation of an internal dialogue (intrapsychological tool) – this internal dialogue can be utilised in future in varying contexts (Marsh & Ketter, 2005; Vygotsky, 1978, cited in Churcher et al., 2014:35). The scaffolding that results is stored in the individual’s memory and can be accessed in the future in order for the individual to make sense of his/her environment (Churcher et al., 2014:35).

In De Jager’s (2018) study, participatory action research (PAR) was applied. Accordingly, educators, as members of inquiry groups, built onto one another’s knowledge bases of how to successfully integrate mobile apps into the classroom. The educators were able to generate ideas among themselves and assist one another in assessing which approaches have the most success in English language education.

1.9.2 Qualitative research approach

In a qualitative research approach we assume that there are multiple realities and that one, finite version of reality does not exist (Braun & Clarke, 2013). Qualitative researchers maintain that knowledge should not be considered apart from the context within which it originated (Braun & Clarke, 2013).

Qualitative research places a reliance on linguistic data as opposed to numerical data, and utilises meaning-based data-analysis methods, rather than statistically based data analysis (Maree, 2016:53). Qualitative research is also naturalistic; it focuses on interactions that happen in natural settings, viewing social life as a process that occurs and not in static terms (Maree, 2016:53). It is therefore focused on meaning that is subjective (Silverman, 2020:3). The main premise of qualitative research is “how humans arrange themselves and their settings and how inhabitants of these settings make sense of their surroundings through symbols, rituals, social structures, social roles, and so forth” (Maree, 2016:53).

Qualitative researchers take into account the appropriateness of and variations in the use of certain methods/theories, the unique views and diversity of participants, and how reflexive the research and the researcher are (Flick, 2018:6). Qualitative

researchers make use of open, exploratory research questions, value the concept of comprehending phenomena from an emic or inside perspective as opposed to an etic or outside one and use various strategies to enhance the credibility of their research (Elliot & Timulak, 2007, cited in Maree, 2016:53). The goal of research becomes discovering and exploring various new theories, as opposed to testing theories that are already known (Flick, 2018:7).

In this study, I applied a qualitative approach, as I believe that there is no one finite reality, but multiple, subjective realities (Braun & Clarke, 2013). This study relied on linguistic data derived from interviews. In addition, the unique beliefs and perspectives of every educator who participated in the study were valued and taken into account when interpreting the data (Maree, 2016:53; Flick, 2018:6). The semi-structured interviews included open and exploratory questions which enabled the participants' perspectives and worldviews to be considered. Finally, multiple resources were utilised to ensure that the results of the study were credible (Elliot & Timulak, 2007, cited in Maree, 2016:53). The main aim of this study was to discover new theories and ideas relating to the successful use of mobile apps to improve English language education and enhance multiliteracy, and a qualitative approach allowed me to achieve this (Flick, 2018:7).

1.9.3 Research design: Case study

A case study is a type of research method involving the intensive study of a person or group with the aim of generalising multiple units of phenomena (Gustafsson, 2017, cited in Heale & Twycross, 2017). It may also be referred to as a systematic inquiry into an individual, a group or a community, where the researcher analyses detailed data relating to multiple aspects (Woods, 1980, cited in Heale & Twycross, 2017). Case-study research acknowledges the significance of subjectivity but does not completely reject the notion of objectivity (Crabtree & Miller, 1999, cited in Maree 2016:82).

A case study design allows the researcher to narrow down a complicated and diverse research topic into smaller, manageable research questions (Heale & Twycross, 2017). Through the collection of qualitative data, the researcher has the ability to gain more detailed insight into the issue at hand (Heale & Twycross, 2017). Case-study

research does tend to be centred around the researcher, often involving the monitoring of participants and an attempt to portray a holistic comprehension of the research context (Cousin, 2005, cited in Heale & Twycross, 2017). Because the researcher is likely to narrow his/her focus, he/she needs to establish the spatial and temporal limitations of the study (Creswell, 2003, cited in Heale & Twycross, 2017). I made use of a descriptive case study, as this enabled me to study the situation in depth and thus arrive at a detailed understanding of the effectiveness of mobile apps in enhancing multiliteracy in the English language classroom.

1.9.4 Research method

In this study, I interviewed the participants (five educators teaching at my school) in order to generate knowledge about the effective use of mobile apps to enhance English language education and multiliteracy (Baldwin, Hoverman, Mackenzie & Tan, 2012:4). In this study, information was generated by conducting semi-structured interviews and analysing participants' lesson plans.

I therefore used a descriptive case study as my research method, as my aim was to find out more about the utilisation of mobile apps to enhance multiliteracy in English language education. This was done by interviewing participants and analysing their lesson plans. The goal of a descriptive case study is "to describe the data as they occur" (Zainal, 2007). Accordingly, a descriptive case study was applied to find out more about and to describe teachers' beliefs regarding mobile app utilisation and the strategies they employ when utilising mobile apps to enhance multiliteracy in English language education. This allowed me to find out more about how mobile apps may be applied to enhance multiliteracy in the English language classroom.

Research site and sampling

The participants for the study were selected using the non-probability method of purposive sampling. Purposive sampling involves performing sampling with a distinct purpose in mind (Maree, 2016:198). Because this study sought to uncover ways for educators to utilise mobile apps to enhance English language education and multiliteracy, the participants had to be teachers. The general population that this study applies to is educators in general, but for the purpose of this study, in-service teachers were selected from the school at which I was employed so that continuous interaction

could take place. The criteria used to select the five educators concerned the research site – the educators were selected from a large, well-resourced urban school. The school accommodates an inclusive learning environment and the classes are moderate in size (a maximum of 27 learners in a class).

Data generation methods and data documentation

For the purpose of data generation, interviews were utilised. Three types of interview are commonly used, namely, open-ended, semi-structured and structured interviews (Maree, 2016:93).

Open-ended interviews involve a conversation which has the intention of providing a platform for participants to share their views, beliefs, ideas and attitudes about particular phenomena (Maree, 2016:93). Semi-structured interviews are used to corroborate emergent data from other sources and are founded on a line of investigation formulated by the researcher before the interview takes place (Maree, 2016:93). Structured interviews incorporate questions that are detailed and formulated ahead of time, with questions being dealt with in a direct and standardised way (Maree, 2016:93).

For the purpose of this study, I used semi-structured interviews in order to incorporate some level of openness, but also included certain structured questions which were posed to the participants (Maree, 2016:93). In addition to using semi-structured interviews, I analysed the data obtained from De Jager's (2018) focus group interview. This interview aimed to create group interaction among the educators in order to generate a range of responses (Maree, 2016:95).

In addition to semi-structured interviews, educators were asked to provide one lesson plan each, in which apps were used in the classroom activities. These lesson plans were analysed for applicable data that could be used to contribute to the findings of this study.

Although I did not wish to bias the study in any way, it was inevitable that my beliefs and worldview somehow influenced the study. For example, I am of the belief that technological integration in the classroom is essential and that most educators simply add it onto their lessons, as opposed to fully integrating it to transform the lesson. I

also believe that mobile apps are often used incorrectly and can therefore result in learners misbehaving. I did, however, make a concerted effort to be as objective as possible.

Data analysis and interpretation

Researchers dealing with an interpretivist paradigm make use of either inductive or deductive thematic data analysis. The former approach enables researchers to see how themes develop from the data, while the latter allows them to go into the data analysis with preconceived ideas about what they are looking for. I followed a deductive thematic analysis by focusing on aspects that relates to the four pillars of multiliteracies. The data were thus mapped to each pillar and checked for meaning.

The data were organised systematically and then coded. Coding is “the process of reading carefully through your transcribed data, line by line, and dividing it into meaningful analytical units” (Maree, 2016:116). Specifically, emergent coding was used, as units of meaning were identified after gaining an overview of the data collected (Stemler, 2001, cited in Maree, 2016:116). The data were then sorted into categories which corresponded with the four pillars of multiliteracies. A thematic analysis was subsequently conducted in order to derive themes from the data themselves (Maree, 2016:39). A thematic analysis comprises highlighting prominent ideas that arise in the data, and then turning them into themes. The themes that I wished to derive from this study related to the effectiveness of the use of mobile apps in English language education. In doing this, I constantly referred back to my conceptual framework in my analysis/interpretation. I therefore thought about social constructivism, multilingualism, translanguaging, communicative competence, cooperative learning and TPACK, and specifically multiliteracies (with a focus on the four pillars of multiliteracies). PAR was evident in De Jager’s (2018) study, when the participants worked together in their utilisation of mobile apps and discussed ideas between themselves in order to help one another.

Ethical considerations

There are multiple principles relating to ethics in research. The risk of harm to participants must be minimised and this involves the following aspects: the researcher must obtain the participants’ informed consent, ensure confidentiality (I know the

participants, but their identities were not communicated in the study), avoid deceptive practices and allow participants to withdraw at any stage (Lund Research Ltd, 2012). Participants should not feel pressured or coerced in any way during the course of the study and are under no obligation to remain in the study if they do not wish to do so (Lund Research Ltd, 2012). I ensured that I obtained permission from the school principal and the educators involved to conduct the study. Participants were provided with consent forms which informed them of all the details of the study so that they were fully aware of what the study entailed.

Educators are obliged to adhere to the South African Schools Act at all times and ensure that all teaching practices and activities fall in line with this Act; accordingly, the education of the learners must not be compromised in any way. The researcher therefore has to keep track of all classroom practices (as far as possible) and monitor the progress of both learners and educators. The researcher also has to ensure that the study is trustworthy and credible; this is done by monitoring all aspects of the study and sticking to the specifications in the research proposal.

One of the main ethical considerations to take into account is protecting the identities of the participants (Maree, 2016:44). In this study, letters of consent were signed by the participants, and they were informed that the study was completely voluntary and that all personal details would be kept confidential (Maree, 2016:44). To ensure confidentiality, pseudonyms were used for all participants. I adhered to the ethical standards prescribed by the University's Ethics Committee and requested ethics clearance for the study based on my supervisor's existing project, using ethics number UP 18/08/01.

Quality criteria

Trustworthiness is central to assuring the quality of a qualitative study, and "is the acid test of your data-analysis, findings and conclusions" (Maree, 2016:123). According to Lincoln and Guba (1985, cited in Elo, Kääriäinen, Kanste, Kyngäs, Pölkki & Utriainen, 2014:2), the objective of trustworthiness in qualitative research is to prove that the findings of the research are worthy of consideration. Therefore, one must continuously take into account the procedures that may be used to assess the trustworthiness of the data analysis (Maree, 2016:123). According to Guba (1981, cited in Maree, 2016:123), there are four criteria that "should be considered by qualitative researchers

in pursuit of a trustworthy study: credibility, transferability, dependability and confirmability” (Maree, 2016:123).

Credibility involves researchers ensuring that the participants in a study are identified and defined accurately (Elo et al., 2014:2). It involves how congruent the findings of the study are with reality and how the researcher can guarantee that the reader will trust the findings (Maree, 2016:123). Strategies that ensure credibility include the application of established research methods, the alignment between the research design and the research question, as well as the alignment between the theoretical underpinning and the methods and the research question (Maree, 2016:123). One can also develop credibility by becoming familiar with the participants and by means of triangulation, intricate data-collection methods and clear, purposive sampling (Lincoln & Guba, 1985, cited in Maree, 2016:123). In this study, I ensured that the participants were described in detail (e.g. qualifications, number of years as an educator, etc.) and I made use of established research methods and a variety of sources.

Transferability deals with the potential for extrapolation and is reliant on whether or not the findings can be transferred to other groups/settings (Elo et al., 2014:2). Transferability is unlike generalisability, in the sense that it does not involve claims that are generalised but allows readers to form links between their unique experiences and aspects of a study (Maree, 2016:124). “To increase transferability, qualitative researchers should focus on (a) how typical the participants are to the context being studied, and (b) the context to which the findings apply” (Maree, 2016:124). The researcher should therefore ensure that thick description is used (which involves the provision of a detailed description of the context), as well as purposeful sampling (Maree, 2016:124). For the purpose of this study, I ensured that my findings were as detailed as possible, and that every step in the process was recorded and explained.

Dependability encompasses the stability of the data under varied conditions and over a period of time (Elo et al., 2014:2). This is indicated by the research design, as well as its implementation, and through “[the] operational details of data gathering; and the reflective appraisal of the project” (Maree, 2016:124). The data analysis process should be tracked at all times so that readers can understand the reasons for making certain decisions, as well as how the researcher conducted the analysis and arrived at the interpretations (Maree, 2016:124). In this study, I tracked every step in the data

analysis process so that the reader would be able to follow it, and I also explained how the analysis was conducted.

Confirmability relates to objectivity – “the potential for congruence between two or more independent people about the data’s accuracy, relevance, or meaning” (Elo et al., 2014:2). It may be considered as the extent of neutrality – the degree to which the participants, and not the researcher (and his/her interests, bias or objectives), shape the findings of the study (Lincoln & Guba, 1985, cited in Maree, 2016:124). Methods to increase confirmability involve triangulation and decreasing the effect of bias on the researcher’s part (Maree, 2016:124). This can be achieved by the researcher admitting his/her predispositions (Maree, 2016:124). In this study, I as the researcher clearly outlined any predispositions I had relating to the research topic. Triangulation involves the combination of multiple lines of sight (e.g. various data-collection methods) and allows researchers to generate a richer, more thorough and more inclusive image of reality (Berg, 2007, cited in Maree, 2016:122). Accordingly, I used various methods of data collection to ensure that I generated a thorough and inclusive depiction of the reality of the use of mobile apps in English language education.

1.10 OVERVIEW OF THE STUDY

This dissertation comprises five chapters, including this introductory chapter – chapter 1. Chapter 2 provides an in-depth literature review of the main concepts dealt with in the study. Chapter 3 involves the research methodology, focusing on aspects such as the research approach and paradigm, and the means by which sampling was done. Chapter 4 entails a discussion of the findings in which important aspects that emerged from the data collection and analysis are reviewed. Chapter 5 focuses on the conclusions derived from the study, as well as making a number of recommendations based on the findings.

1.11 CONCLUSION

This chapter outlined the research study, providing a basic introduction to the way in which the research questions were used to guide research on the utilisation of mobile apps to enhance English language education in the classroom.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In chapter 1, I provided a detailed outline of the study, discussing the background and context, rationale and motivation, focus and purpose, research questions, as well as the theoretical framework and methodological approach. I also provided a brief review of the relevant literature and an overview of the study. In chapter 2, I provide a detailed literature review, discussing and clarifying certain aspects of the review. In doing so, I firstly discuss the issue of the use of English as the language of learning and teaching (LoLT), the fact that English is not the mother tongue of most South African learners, and how technology such as mobile apps can be used to enhance multiliteracy in the English language classroom. I then discuss the core theoretical frameworks underpinning the study, namely, social constructivism, multilingualism, translanguaging, multiliteracies, cooperative learning, communicative competence, and technology integration in teaching English. I conclude the chapter with a summary of the core concepts of the study.

The South African education system primarily uses English as the LoLT. English is also taught as either a Home Language (L1), First Additional Language (L2) or Second Additional Language (FL). The use of English as the LoLT has placed increased pressure on learners and educators and has affected learner achievement. The reason for this is that in South Africa, which has eleven official languages, most learners do not have English as their mother tongue. This has an impact on the effectiveness of teaching pedagogy and learners' academic performance (Lemmer & Manyike, 2014:251). Nevertheless, English remains the dominant language and is used not only in education, but also in public domains (Balfour & Mkhize, 2017:133).

Studies have suggested that underachievement and failure rates in South African schools correlate with learners being instructed in English when it is not their mother tongue (Jordaan, 2017). Failure rates can also be linked to the fact that English pedagogy has not been developed enough to be successfully used as an LoLT. The domination of English as the LoLT in basic and tertiary education has had negative consequences for speakers of another mother tongue (Feish, 2008; Moloji & Chetty,

2011, as cited in Balfour & Mkhize, 2017:134). When the time comes for children to transition from the teaching pedagogy at a high school level to that at a university level, few students have achieved ‘coordinate bilingualism’ (a term coined by Widdowson, 2001, as cited in Balfour & Mkhize, 2017:134) and struggle to comprehend or express “complex meaning in more than one language in the four basic literacy skills” (Balfour & Mkhize, 2017: 134). The reason students struggle to comprehend and/or express meaning in a language other than their mother tongue is because South Africa’s education system has failed to offer sustained learning and acquisition opportunities in multiple languages throughout schooling for most of the population (Barnes, 2004, as cited in Balfour & Mkhize, 2017:134). The lack of skills acquisition in more than one language persists because teachers are trained to present lessons in English (Balfour & Mkhize, 2017:134).

The training of teachers in the use of English as the LoLT means that learners who speak an African language as their mother tongue do not get the educational support that they require in order to develop in all their subjects at school. African languages have not been prioritised as academic languages of instruction, and minimal awareness of translanguaging pedagogies in the South African classroom has led to many learners falling behind in their subjects, including English (Balfour & Mkhize, 2017:134). In addition, African language teaching pedagogies have experienced lesser development than English teaching pedagogies (Balfour & Mkhize, 2017:138). A perusal of the South African Constitution (1996), as well as various legislative frameworks, makes one aware that the widespread use of English usage denies the language rights of South African citizens who do not speak English as their mother tongue (Balfour & Mkhize, 2017:133). According to Cillié and Coetzee 2013 (cited in Balfour & Mkhize, 2017:139), a lack of development in the home language further complicates the acquisition of another language like English.

Many South African English-medium government schools require learners to take English as a Home Language as a subject, yet most learners in this setting do not use English as their mother tongue. To assist with the acquisition of English in the classroom, technology can be used as a tool to improve teaching pedagogy and learner comprehension (Hankins et al., 2021:52; Anh, Bao Tran, Lam Kieu, Phi Ho, & Thanh Nga, 2021:24). The use of technology in English education engages learners

in new and innovative ways, making the learning experience more exciting and relatable for learners (Anh et al., 2021:24). Arifah (2014, as cited in Anh et al., 2021:24) believes that having access to the internet provides a motivation for learners to learn. Technology allows teachers to incorporate various media such as music and videos in their teaching, increasing learners' intellectual awareness and cognitive skills (Anh et al., 2021:24). Having access to technology also allows learners to communicate easily with one another and discover new knowledge together on an online platform (Zazulak, 2016, cited in Anh et al., 2021:24). The utilisation of technology, including mobile apps, is gaining increased attention, as mobile apps are readily accessible to learners (Hankins et al., 2021:52; Anh et al., 2021:24). Further research into the effective use of mobile apps is therefore essential in order to aim for the effective use of mobile apps to improve the pedagogy in English language education (Hankins et al., 2021:52).

The goal of mobile app utilisation in the classroom is to enhance language learning and teaching, with a focus on improving learners' communicative competence and speaking skills (De Jager, 2018). The use of technology in the classroom may lead to lessening the gap that is evident between the use of traditional pedagogies and the current needs of learners; these current needs or preferences may be addressed by augmenting teaching pedagogies to include technology that learners are familiar with (De Jager, 2018). The Curriculum and Assessment Policy Statement (CAPS) of 2011, pertaining to teaching English as a Home Language (L1), First Additional Language (L2) and Second Additional language (FL), advocates not only for the utilisation of technology in the classroom, but also for education to occur in a social constructivist classroom, where learners are given the opportunity to formulate their own knowledge and build on each other's knowledge.

2.2 SOCIAL CONSTRUCTIVISM

The theory of social constructivism was founded within the fields of sociology and communication and "examines the knowledge and understandings of the world that are developed jointly by individuals" (Amineh & Asl, 2015:13). A fundamental aspect of the theory is the assumption that human beings create their own experiences by forming a model of the world as a social component and of how this social world functions (Leeds-Hurwitz, 2009, cited in Amineh & Asl, 2015:13). Another fundamental

aspect of social constructivism is that language is viewed as the primary system that humans use to construct reality (Leeds-Hurwitz, 2009, cited in Amineh & Asl, 2015:13).

Social constructivist theory was proposed by Vygotsky (1978). It holds that knowledge is generated when interacting and speaking in dialogue with those around us (Churcher et al., 2014:35). It proposes that language can be used as an interpsychological tool among a group of individuals, allowing them to learn effectively from one another. The lessons that individuals learn as a result can then be used in the future when similar situations may arise (Marsh & Ketterer; Vygotsky, cited in Churcher et al., 2014:35). The process of having learners build on their own knowledge whilst acknowledging and utilising the ideas of others is known as scaffolding. Such scaffolding contributes to the learner's field of knowledge, is stored in the learner's memory and can be accessed when needed in future situations to make sense of the world (Churcher et al., 2014:35).

Figure 2.1 is a visual representation of Vygotsky's (1978) zone of proximal development (ZPD) and scaffolding.

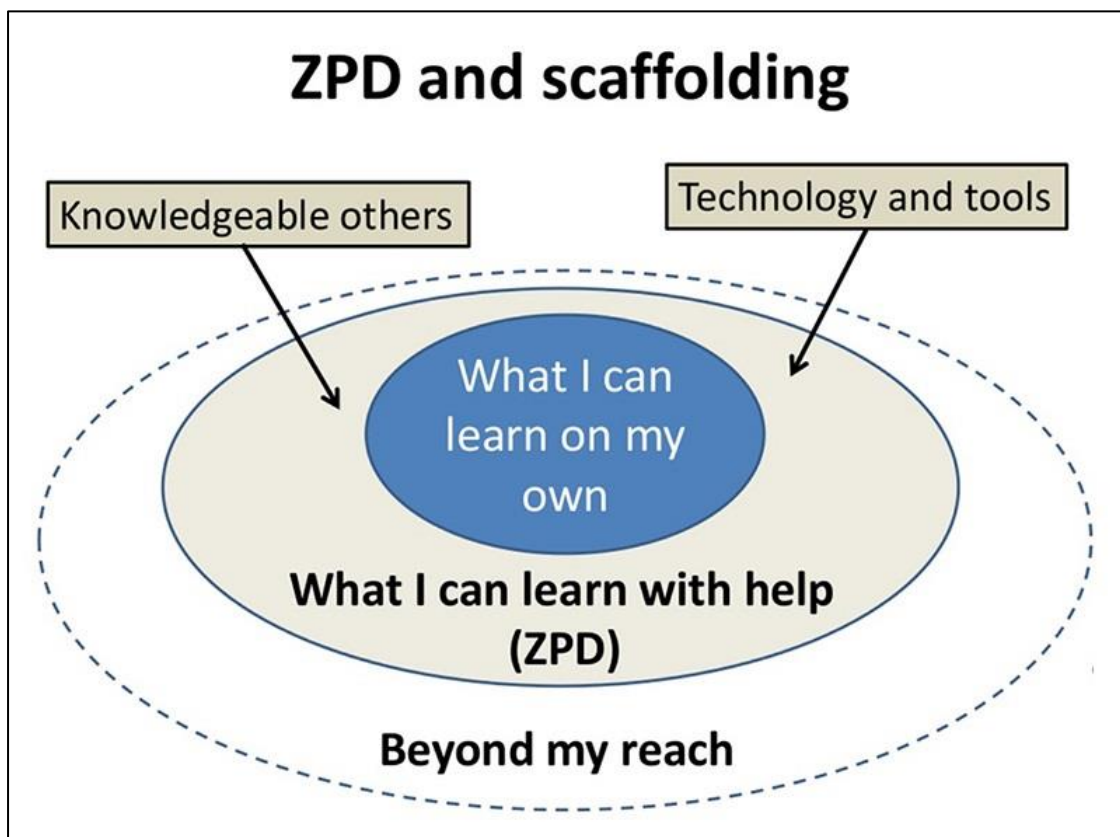


Figure 2.1: ZPD and scaffolding

Source: Wheeler, 2013, as cited in Skyteach, 2023

Figure 2.1 illustrates that there is a limited amount of knowledge that an individual can attain on their own without the assistance of resources and the thoughts and opinions of others. The image reinforces the idea that individuals learn more effectively when they are drawing on the knowledge of others, as opposed to simply relying on their own knowledge (Marsh & Ketterer; Vygotsky, cited in Churcher et al., 2014:35). It also highlights how the use of technology and tools can contribute to the process of scaffolding knowledge attained from others; this knowledge is then assimilated into one's own knowledge. Interaction with others, the sharing of knowledge and opinions and the use of tools and technology may enable an individual to attain knowledge that was originally out of their reach.

Social constructivism may not only be interpreted as a process of collaborating and building on one's own ideas by acknowledging those of others, but also as a theoretical framework that allows one to use metaphors to enhance language education. Reagan (2009, as cited in Jordaan, 2017) states that learning theories and language learning can be viewed as metaphors that are culturally determined and may be used as cognitive tools in the shaping of our thought processes. Such metaphors allow for a deeper understanding of the content being taught and allow the process of scaffolding to occur in learners' minds. Although science has made advancements in understanding how learning occurs in the human brain, improvement is still needed when it comes to the effective application of knowledge and teaching pedagogy in the classroom (Jordaan, 2017). To apply knowledge and teaching pedagogy effectively in the learning environment (Jordaan, 2017) mobile apps can be utilised. The introduction of mobile apps in English lessons may assist in bridging the gap between conveying knowledge ineffectively and conveying it effectively to learners, thereby improving teaching pedagogy. The use of mobile apps will thus provide educators and learners with an opportunity to collaborate effectively and to build on one another's knowledge bases, as scaffolding will then take place.

CAPS advocates for the use of social constructivism in the classroom with the aim of giving learners the opportunity to obtain and apply knowledge/skills in a manner that enhances meaning in their lives. Accordingly, the curriculum not only encourages learners to focus on their own, local contexts, but also encourages them to take cognisance of global issues (Department of Basic Education, 2011a). The CAPS

curriculum therefore encourages learners to draw on their own knowledge within their unique contexts, while being respectful of issues outside these contexts, and to become aware of the importance of the diversity and inclusivity of those around them. Learners should include themselves in their learning experience and make an effort to negotiate their own, unique interpretations in relation to those of their peers, thereby respecting their peers' opinions while valuing their own. Within a social constructivist setting, the various languages that learners speak are valued and contribute to the diversity of the classroom setting. This facilitates an inclusive learning environment, where learners are given the chance to decipher the content in their own language. This allows learners to have a deeper understanding of the content that is dealt with in the classroom, allows learners to feel included in a diverse and accepting environment, and contributes to the classroom becoming a multiliterate setting in which effective learning can take place.

This study was guided by social constructivist theory (Vygotsky, 1978) in multiple ways. One focus of the study was how mobile apps could be utilised to promote social constructivism in the English language classroom, thereby contributing to multiliteracies. This focus was based upon how mobile apps could enhance opportunities for learners and educators to collaborate, and the extent to which mobile apps could be used to enhance collaborative learning between learners, whilst allowing learners to build on their own knowledge base by means of scaffolding (Churcher, Downs & Tewksbury, 2014:35). In addition, the study made use of secondary data from a study conducted by De Jager (2018), where pre-service educators researched and utilised mobile apps and generated ideas from one another through participatory action research (PAR). This was a registered project for students for which an ethics number was provided. The data from this study were made available to me for use in the current research. In De Jager's (2018) study, pre-service educators came together to assist one another in assessing the effectiveness of different types of mobile app, and how to enhance their effectiveness. Finally, as an English language educator with substantial teaching experience, I began this study with the belief that mobile apps have the potential to promote a social constructivist classroom setting, thereby promoting multiliteracies in the English language classroom.

2.3 MULTILINGUALISM

As part of a social constructivist setting, learners are able to contribute to one another's knowledge by expressing ideas in their own language, or expressing ideas that are derived from their own language. Multilingualism can therefore contribute to an educational environment that is conducive to social constructivism. The CAPS curriculum advocates for additive bilingualism in the classroom so that it becomes a multilingual environment; this is important in the South African educational setting, as the majority of learners do not speak English as their mother tongue, and learners therefore bring different languages to the classroom environment. Having competency in multiple languages allows the environment that learners participate in to become more inclusive, and makes it easier for learners to build on one another's knowledge (Desai, 2003; Burcu et al., 2014; Prah, 2006, as cited in Katiya & Nomlomo, 2018:80).

Multilingualism "refers to the 'coexistence, contact and interaction of different languages' at the societal and individual level" (Wei, 2013, as cited in de Zarobe & de Zarobe, 2015:394). It also refers to an individual "who can function in two or more languages in conversational interaction" (Wei, 2013, as cited in de Zarobe & de Zarobe, 2015:394). Multilingualism can mean that a society is made up of individuals who speak various language, and it may also refer to individuals who can speak various languages themselves (de Zarobe & de Zarobe, 2015:394). At both the individual and societal level, exposure to different languages may be necessary and beneficial for individuals (de Zarobe & de Zarobe, 2015:394). Multilingualism has proven to be beneficial in education, having multiple advantages when it comes to cognition, society and academics (Jordaan, 2017). Such advantages become apparent in the South African education system, as South Africa is linguistically diverse, which affords learners the opportunity to advance linguistically in both their home language and other additional languages (Jordaan, 2017). The multilingual nature of South African society provides an opportunity for diversification and inclusivity in the classroom environment, and thus the use of multiliteracies to a greater extent in the classroom. Having learners who speak other languages as their mother tongue is advantageous to the rest of the class, allowing learners to experience learning in multiple ways and to be exposed to other languages.

A multilingual classroom environment shows learners that their mother tongues are assets for the class as a whole. Educators can use multilingualism in the classroom to not only assist learners in their learning but also to contribute to a multiliterate and inclusive classroom environment, where learners are exposed to various languages and teaching pedagogies. Having a multilingual classroom environment should therefore not be seen as a challenge, but rather as an asset for both educators and learners.

Multilingualism can be linked to another aspect discussed in this study, namely, translanguaging. The aim of translanguaging is to shift away from philosophies that embrace monolingualism towards those that embrace multilingualism (Cenoz & Gorter, 2020:300). Multilingualism therefore supports the principles of translanguaging, and vice versa. Multiliteracy can be promoted by both multilingualism and translanguaging, because knowledge of other languages introduces learners to different views and cultures, thus enhancing diversity and inclusivity in the classroom environment, and encouraging learners to think critically (Sang, 2017:16).

2.4 TRANSLANGUAGING

Translanguaging is a concept that advocates for a shift away from monolingual ideologies and adopts a dynamic view of multilingualism – translanguaging – thus advocating for a multilingual classroom environment in which all learners' mother tongues are viewed as an asset (Cenoz & Gorter, 2020:300). "Instead of a focus on language forms (and accurate use of them), translanguaging focuses on language-in-use, that is, on how interlocutors fluidly leverage semiotic resources in communication in order to make meaning" (Zein, 2022:6). Translanguaging involves bilingual speakers utilising features from a singular system, as opposed to linguistic systems (comprehended as conventionally named languages) (Zein, 2022:6). Translanguaging encourages educators and learners to utilise multilingualism – learners are encouraged to share their home languages among themselves, while educators are encouraged to incorporate multilingualism into their teaching and learning methods. According to Orellana and García (2014, as cited in Zein, 2022:6), learners will then actually be drawing from a linguistic range, as opposed to swapping from one specific language system to a different language system. This means that learners can benefit

from translanguaging when it comes to learning content in a different language, irrespective of their home language.

In South Africa, there is a fundamental need to integrate translanguaging pedagogies effectively into English language lessons, as this may assist learners and educators to overcome language barriers that hinder effective learning in the classroom (Balfour & Mkhize, 2017:134). Translanguaging does not simply involve direct translation and code switching, but “encompasses complex exchanges between individuals with different histories and backgrounds that are not constrained by fixed, traditionally defined languages” (Zein, 2022:6). Learners in South Africa come from multiple, diverse backgrounds and cultures, which provides educators with a unique opportunity to embrace these diverse backgrounds and cultures in the classroom, and to create a multiliterate classroom environment. Learners will subsequently be given the chance to feel that they are contributing from their unique linguistic range/repertoire, while learning from the linguistic repertoires of others.

Incorporating translanguaging into teaching pedagogies involves teaching the language and content simultaneously while embracing more than one language in English language teaching (Balfour & Mkhize, 2017:134). Learners’ home languages are therefore valued while teaching the content. When a learner is not taught in their home language, or when their home language is ignored, it may result in the learner feeling as if their respective culture and self-identity is not valued (Lemmer & Manyike, 2014:256). Viewing the learners’ home languages as assets, as opposed to possible challenges or barriers to understanding, allows learners to feel valued and encourages them to contribute their language, along with their backgrounds and contexts, to the classroom environment. Acknowledging and embracing learners’ home languages in teaching empowers learners culturally and academically and allows them to develop into life-long learners and productive individuals in society (Lemmer & Manyike, 2014:256). Developing a deeper understanding of the importance of translanguaging in education will assist educators in their endeavours to deal with language and content simultaneously, whilst addressing the challenges learners face.

2.5 MULTILITERACIES

The New London Group (NLG), made up of ten different authors, invented the term, “multiliteracies” in order to redirect literacy learning to focus on the socially constructed future of learners living in an environment with a great deal of cultural and linguistic diversity, within a technologically advanced and developing era (NLG, 1996, as cited in Boreland, Lotherington, Thumlert & Tomin, 2021:142). This addressed “the ‘why’ (responding to radically changing socio-technical contexts), ‘what’ (multimodal redesign) and ‘how’ (situated practice, overt instruction, critical framing and transformed practice) of multiliteracies” (NLG, 1996, as cited in Boreland et al., 2021:142) and allowed for existing teaching pedagogies to be adapted to suit the changing needs of learners (Boreland et al., 2021:142). The formation of the multiliteracies framework had led to new perspectives on how learners learn effectively, and how educators can adapt their teaching methods to suit the needs of all learners in the classroom. This has enabled the formation of classrooms that are inclusive, valuing the needs and abilities of each learner as a unique individual.

The four pillars of the multiliteracies framework, namely, overt instruction, situated practice, critical framing and transformed practice, form the basis of the framework (Engelbrecht & Genis, 2019:7–8). Overt instruction places emphasis on the educator being directly involved in teaching and providing active intervention, where the educator enables learners to use and extend their existing skills and knowledge and link them to literacies outside of school (Latha, 2001; Roswell, Kosnik & Beck, 2008, as cited in Engelbrecht & Genis, 2019:7). Situated practice involves the engagement of learners in meaningful lessons that are based on their own experiences (meaningful to their backgrounds and cultures) and link their existing knowledge “to new culture-specific contexts” (Engelbrecht & Genis, 2019:7). This means that learners are provided with authentic lessons, where they are encouraged to practise authenticity and value the information that they can contribute to the content/lesson. Critical framing allows learners to analyse texts in order to understand how language and power relate to one another (Janks, 2010, as cited in Engelbrecht & Genis, 2019:8). Learners should question other perspectives and ask themselves whose interests the text serves, and who the text benefits (Janks, 2010, as cited in Engelbrecht & Genis, 2019:8). This allows learners to become critical thinkers, and to respect and value the

perspectives of others on various subjects, whilst understanding that power dynamics exist in texts. Lastly, transformed practice allows learners to utilise “knowledge to redesign meaning that transfers ideas from one context to the individual’s own context” (Engelbrecht & Genis, 2019:8). This enables learners to reinvent the knowledge they have gained.

The multiliteracies framework encourages the use of various methods and modes of teaching, focusing on multimodalities in the classroom; this includes aural, gestural, visual, kinaesthetic and technological learning (Engelbrecht & Genis, 2019:29). Society is ever-changing and developing, meaning that the language skills of individuals need to be ever-changing as well (Sang, 2017:16). This means that new requirements are needed for effective literacy development, and to ensure that individuals can keep up with evolving ideas in society (Sang, 2017:16). The integration of mobile apps in English language education will allow for the increased development of a multiliterate classroom environment, leading to the improvement of learning and teaching in the classroom. The integration of apps will be conducive to multimodal lessons, as the utilisation of technology allows for a variety of learning methods and learning styles. Such app integration will allow learners who are visually inclined, for example, to have access to visual resources in the lesson, because the apps can be used and adapted in such a way as to accommodate other learning preferences/styles, such as aural and gestural learning, as well. The use of mobile apps also encourages the use of translanguaging in the classroom. This will help to develop learners’ language skills and enable them to engage effectively with the content knowledge and function effectively in an ever-changing world with a multiplicity of languages, cultures and backgrounds.

The use of technology such as mobile apps for language education is becoming more commonplace in the classroom (Gangaiamaran & Pasupathi, 2017:11242). There are many emerging tools and sites that have given professionals the chance to critically reconsider the roles that artificial intelligence (AI), mobile apps, virtual assistants and the like can play in the area of plurilingual learning and language learning as a whole (Boreland et al., 2021:145). In order for language education to become more effective in South African schools, mobile apps cannot simply be used to replace or substitute teaching methods; they have to be utilised to enhance multiliteracy effectively so that

active learning can take place (Lemmer & Manyike, 2014:256). A concerted effort needs to be made to form a clear link between research into aspects like technology and apps, and institutional support, and the training provided to educators, so that such technology is effectively utilised (Lemmer & Manyike, 2014:256). Mobile apps will not have the desired effect of enhancing English language education in South African classrooms if educators are simply left to deal with the resources, and not provided with any training on how to effectively adapt their teaching pedagogy to the use of such apps so as to enhance multiliteracies in the classroom. Figure 2.2 presents the four pillars that underly a multiliteracies pedagogy:

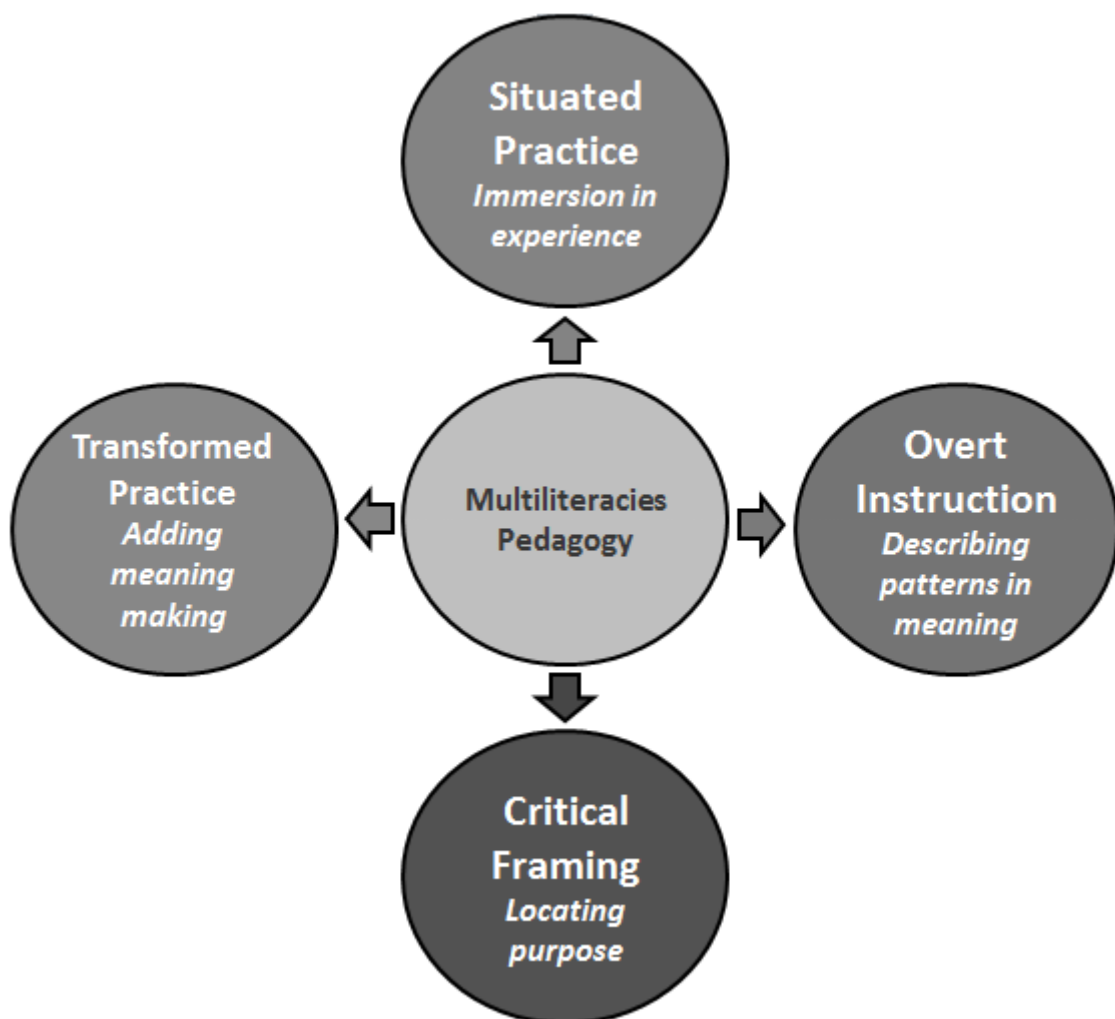


Figure 2.2: The four pillars of multiliteracies
 Source: El-Hassan & Hamdan Alghamdi, 2016:418

Figure 2.2 illustrates the four dimensions of pedagogy that form the foundation of the multiliteracies framework (El-Hassan & Hamdan Alghamdi, 2016: 419). The dimensions of situated practice, overt instruction, critical framing and transformed

practice assist educators in ensuring that their pedagogy is conducive to creating a multiliterate classroom environment (El-Hassan & Hamdan Alghamdi, 2016:419). This enables educators to develop their pedagogy in order to ensure that learners are fully engaged in learning, that multimodality is evident in the learning environment and that the sole focus is not contemporary literacy education alone (El-Hassan & Hamdan Alghamdi, 2016:419). The achievement of a multiliterate classroom environment is also dependent on learner and teacher collaboration and interaction (The Enthusiastic Learner, 2023). As such, cooperative learning is also an integral component of this study.

2.6 COOPERATIVE LEARNING

Cooperative learning involves teaching and learning methods where learners collaborate in small groups in order to assist one another in understanding the content presented to them (Slavin, 2014:3). This allows all members of the group to optimise their own learning experiences, drawing on the perspectives and ideas of other group members (Sukmawati et al., 2020:75). Cooperative-based learning is advocated for in the social constructivist classroom, where learning activities involve techniques that promote intentional and purposeful learning, where learners work with one another to achieve the same learning objectives (Barkley et al., cited in Clapper, 2015:151).

Cooperative learning and its success are based on four key theoretical perspectives: the motivationalist perspective, the social cohesion perspective, the cognitive-developmental perspective, and lastly, the cognitive elaboration perspective (Slavin, 2014:4). The motivationalist perspective maintains that in order for learners to attain their personal goals, they have to work with the other member of their group in order to succeed. Therefore, the only way that individuals can be successful is if the group as a whole is successful, which motivates individuals to participate effectively in the group and maximise their efforts in order to achieve success (Slavin, 2014:7). The social cohesion perspective is linked to the motivationalist perspective, in that the achievement of the group is dependent on the cohesiveness of the group, and the social cohesion perspective focuses on motivational explanations for cooperative learning to achieve instructional effectiveness (Slavin, 2014:10). Learners are encouraged to interact with each other and participate in the task at hand because they want to see one another succeed and can identify with them (Slavin, 2014: 10).

The cognitive-developmental perspective maintains that the interaction of learners with an appropriate task and with one another enhances their cognition of vital concepts (Slavin, 2014: 13). This can be linked to Vygotsky's (1978) ZPD which prioritises a learner-centred approach and encourages learners to make use of internal reflection and verbalisation to transform or evolve particular behaviours (Clapper, 2015: 150). The cognitive elaboration perspective promotes the concept of elaboration – learners are encouraged to listen to and recall information, and to contribute to one another's ideas, enhancing the development of their own knowledge (Slavin, 2014:15).

Vygotsky's (1978) ZPD is important in cooperative learning, because it advocates for group work, in the sense that learners are encouraged to share ideas and build on one another's knowledge (Clapper, 2015:150). When learners are working together, they are motivated to work with activities that are facilitated by learning tools and resources like mobile apps (Clapper, 2015:150). If learners come across challenges and are unable to assimilate new frameworks of knowledge with existing frameworks, their peers or educators can assist them in that assimilation by filling in the necessary gaps in their knowledge base (Clapper, 2015:150). Cooperative learning and Vygotsky's (1978) ZPD form core aspects of effective English language teaching in a multiliterate classroom environment. The connection between cooperative learning and Vygotsky's (1978) ZPD, and how they can be applied (while using technology to enhance the teaching of the English language (Clapper, 2015:149), is one of the core focuses in this study.

Cooperative learning does not only provide a multitude of benefits for learners while they are in school, but also serves to prepare them to become interactive adults who are able to engage in teams in the working world (Sukmawati et al., 2020:75). Cooperative learning therefore prepares learners to cope as adults in the working world and in society as a whole and is a vital life skill. Because Vygotsky's (1978) ZPD and cooperative learning are core aspects of this study, attention will be placed on teaching pedagogies that encourage learners to formulate their own knowledge through their interaction with educators and other learners (Clapper, 2015:150).

This study involves the use of data obtained from the inquiry groups, which means that cooperative learning is a core focus in this study. Inquiry groups are comprised of individuals who work as a group, online or in person, meeting at specific intervals over

a period of time (Northeastern University, 2022). In De Jager's (2018) study, data were obtained from the inquiry group. This comprised pre-service teachers who participated as a group to build on one another's ideas about the use of technology in the classroom. Inquiry groups encourage and promote cooperative-based learning, as individuals work with one another to attain specific objectives (Barkley et al., cited in Clapper, 2015:151).

2.7 COMMUNICATIVE COMPETENCE

Communicative competence, according to Light (1989, as cited in Light & McNaughton, 2014:2), is founded "on three fundamental constructs: (a) functionality of communication; (b) adequacy of communication; and (c) sufficiency of knowledge, judgement, and skill" (Light & McNaughton, 2014:2). The social rules applicable to a language "(the appropriateness of utterances in relation to the context in which they are expressed)" (Quist, 2023), make up what Hymes (1972) refers to as 'communicative competence' (Quist, 2023). Hymes' (1972) perspective on communicative competence "brought an anthropological understanding to language" (Quist, 2023), because it supplied a model with which to analyse communicative events within their sociocultural context (Quist, 2023). Hymes' (1972) model "indicates the various parameters that govern communication in terms of what to say, when, to whom, and how to say it, and with what intention" (Quist, 2023). One of the primary goals of English language education is to assist learners in achieving communicative competence, thereby assisting them to use English language correctly and communicate effectively, and to know how to use the English language in different contexts. Communicative competence is therefore a core focus in English language education.

Communicative competence is not only made up of linguistic components; it also comprises components that do not involve the use of words, such as body language and facial expression (Fantini, 2020:31–38). Communicative competence in language education also focuses on the various dimensions of the effective use of communication in multiple-language cultures (Fantini, 2020:53). Thus, the concept of communicative competence cannot be viewed in isolation; it has to be viewed within the cultural and social context in which it exists (Galajda, 2012:143). Communicative competence is a life skill that extends beyond the classroom into the working world.

Communicative competence is a core aspect of this study: the desired outcome of mobile app utilisation to enhance multiliteracies in the English language classroom is that the communicative competence of all learners shows improvement. The study also analysed the communicative competence of pre-service teachers in De Jager's (2018) study when communicating the efficacy of mobile apps among themselves. Communicative competence forms an integral part of learning and teaching, and the goal of English educators is to assist learners to achieve it. The mobile apps discussed in this study are also analysed for their effectiveness and how conducive they are in helping to achieve communicative competence. Multiliteracies in English language education cannot be enhanced if one disregards communicative competence, as it enables educators to make use of a multiplicity of learning styles, thereby contributing to a multiliterate classroom environment.

2.8 TECHNOLOGY INTEGRATION IN TEACHING ENGLISH

South Africa, as a developing country, faces multiple barriers when it comes to implementing technology in the classroom and in schools as a whole. The Department of Education (DBE) has placed and continues to place emphasis on the importance of utilising technology, so much so, that the department has mandated the incorporation of technology in teaching and learning activities in the classroom. Although this mandate is in place, South African schools continue to face multiple challenges with regard to technological integration. Many South African schools have limited or no access to technology; this is as a result of a lack of funding and the inability of some parents to pay school fees. In addition, many schools do not have the infrastructure to accommodate advanced technology or internet connections. This has been exacerbated by the current energy crisis, as increasing blackouts (periods when the electricity is switched off or not available) are preventing effective teaching and learning from taking place. This is especially evident in schools in rural communities that do not have generators to overcome the power outages. In time, the energy crisis could also affect wealthier private schools, as generators are unable to meet the constant demand for electricity.

Unlike developed countries, which do not face the same challenges when it comes to a lack of funding and infrastructure, the South African education system has to find practical ways to implement technology such as mobile apps in the classroom

(Gangaiamaran & Pasupathi, 2017:11249). When it comes to the different forms of technology, the education sector in South Africa would benefit most from the utilisation of off-line, mobile apps. This is because most learners, irrespective of their backgrounds/contexts, have access to mobile devices but have limited access to the internet. The utilisation of off-line apps could also assist in lessening the gap that is evident between the education systems in richer and poorer communities, helping address inequality when it comes to access to resources (Gangaiamaran & Pasupathi, 2017:11249).

The challenges faced by educators and the teaching system in South Africa extend beyond the lack of resources and infrastructure. Many schools, especially those in rural areas, have teachers who are not equipped with sufficient content knowledge and literacy skills, and do not utilise the resources that they do have at their disposal effectively (Jordaan, 2017). There is also a lack of training available for educators to learn how to utilise technology in the classroom effectively. This lack of training and lack of technology use perpetuates feelings of anxiety in many educators, as they would rather continue applying the teaching methods that they are comfortable with and can work with (Gangaiamaran & Pasupathi, 2017:11249). Such feelings of anxiety result in teachers developing a negative attitude towards the utilisation of technology in the classroom, as it becomes yet another challenge that educators have to overcome. By contrast, the utilisation of technology should be viewed as an opportunity to further engage learners in the learning experience as opposed to making teaching more challenging (Gangaiamaran & Pasupathi, 2017:11249).

While qualified educators may experience anxiety when using technology in the classroom, pre-service teachers, who do not have that initial level of confidence in the classroom, may feel even more intimidated by having to incorporate such technologies. On the other hand, pre-service teachers may, unlike senior teachers, be more willing and enthusiastic to embrace the use of technology in the classroom, which will be beneficial to learners' educational experience. Irrespective of how pre-service teachers feel about technology, tertiary institutions need to focus on training pre-service teachers effectively to use technology to enhance teaching pedagogies in the classroom, so that learners may benefit from its incorporation (Voogt & McKenney, 2017:69). Learners are directly affected by the way educators feel about using

technology in the classroom. The educator's attitude in this regard has a direct impact on the learners and the use of technology as an integral part of a multiliterate classroom environment. By incorporating technology such as mobile apps effectively, educators will be able to make the lesson and its contents more relatable to learners; this is conducive to a multiliterate classroom environment, as learners will not only become more involved in their own learning processes but will also become more interested in the lessons. Both pre-service and qualified educators need to be equipped with knowledge on how appropriate certain technologies are for certain age groups, and how different age groups can utilise technology like mobile apps effectively to enhance their learning experience. This may assist in the attainment of multiliteracies in the English language classroom environment (Gangaiamaran & Pasupathi, 2017:11249).

Integrating technology such as apps into the classroom provides a means through which communication between learners and between the educator and learners can be advanced. The use of technology can also extend the means of communication that learners have, allowing for both communication inside and outside the classroom. Technology not only allows for communication but also enables teachers to develop educational practices that involve technology in order to enhance the learning experience (Voogt & McKenney, 2017:70). The use of an app such as Microsoft Teams enables educators to, for example, communicate information about assessments to learners and to share lesson recordings and additional resources with them. An app such as Google Classroom also allows learners to collaborate by, for example, working on a Google document and editing it together or adding their ideas to the ideas of others in a group task. This allows learners to work on group tasks outside of school hours. There are also mobile apps like WhatsApp, which are accessible to almost everyone, that learners can use in order to collaborate and discuss.

Owing to the importance of the integration of technology in the classroom, this study focused on the use of certain theoretical frameworks that advance the pedagogical principles of technology integration. Technological pedagogical content knowledge (TPACK) is a framework introduced by Mishra and Koehler (2006) which is effective for incorporating traditional teaching pedagogies and content with information and

communication technology (ICT) (Voogt & McKenney, 2017:70). In the successful integration of technology in the classroom, the TPACK framework shows that technology cannot simply be used as a substitute for traditional teaching pedagogies, but can work hand in hand with such pedagogies and the existing content taught to learners to enhance learners' learning experiences. This enables educators to apply accepted educational practices, while leaving room for technology to enhance learning and promote a multiliterate classroom environment (Voogt & McKenney, 2017:70). In order for learners to become more involved in lessons, there is a need for them to take on an active role in their learning experience. This is where Vygotsky's (1978) ZPD and social constructivist theory come into play. These theoretical frameworks advocate that learners should be active participants in their learning and should formulate and build on their own knowledge. Education has to move towards learner-centred teaching styles. Accordingly, mobile apps can provide learners with a support tool or a means to regulate their own learning and can also assist educators in this process (Gangaiamaran & Pasupathi, 2017:11249).

Although it is essential for learners to utilise and have access to technology in the classroom, it is also important that they do not take advantage of or misuse the technology that they have at their disposal. The focus therefore has to remain on linking traditional pedagogies and technologies in such a way that teaching methodologies are actually enhanced, and that the technology plays an active role in learning (Churcher et al., 2014:46). Figure 2.3 provides a visual representation of the TPACK framework:

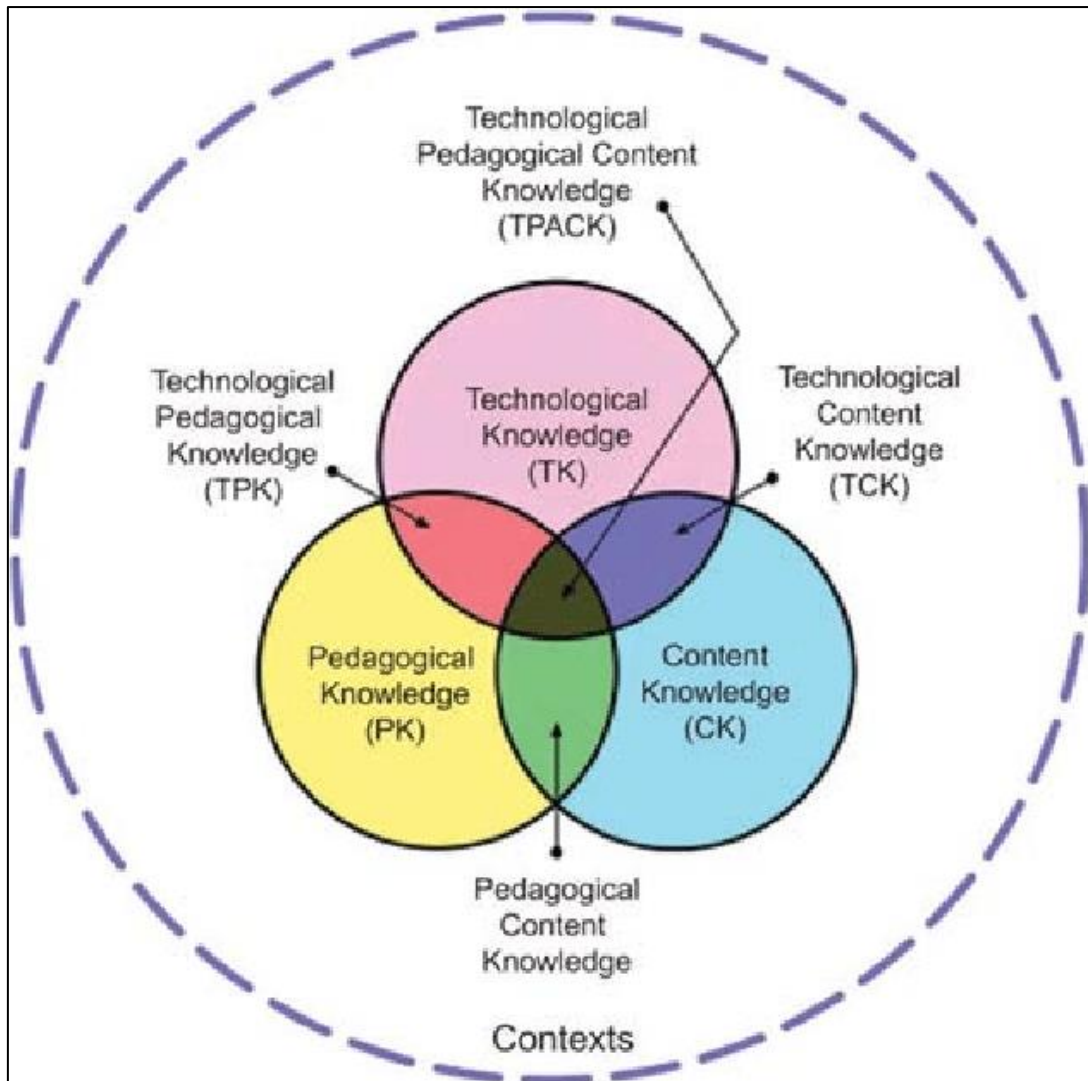


Figure 2.3: The TPACK framework

Source: Pernaa & Wiedmer, 2019:3

Figure 2.3 is a visual depiction of how TPACK is achieved. TPACK is attained through the interaction of its three components, namely technological knowledge (TK), content knowledge (CK) and pedagogical knowledge (PK) (Pernaa & Wiedmer, 2019:3). According to the TPACK framework, educators can merge the content they teach and their teaching pedagogies with technology, using it as a support tool, to assist learners in attaining new knowledge in innovative and effective ways (Gangaiamaran & Pasupathi, 2017:11249).

2.9 CONCLUSION

In chapter 2, I provided an overview of the relevant literature that deals with the topic and purpose of this study, namely, the use of mobile apps to enhance multiliteracy in English language education. I further discussed the key theories and frameworks upon

which this study was based, including social constructivism and Vygotsky's (1978) ZPD. These were linked to multiliteracies and the way in which these theories facilitate a multiliterate classroom was discussed. Multilingualism and translanguaging, and the contribution that the application of these theories can make to learners who do not speak English as a home language, were discussed, while multiliteracies was discussed in terms of its four pillars, as was the importance of multimodal lessons and the use of technology in class. Cooperative learning and the contribution of ideas within a group setting were linked to the enhancement of multiliteracies. These theories were jointly used as a lens through which to investigate how learners achieve communicative competence. Communicative competence, which is the end goal for learners in English language education, was discussed in detail. Lastly, chapter 2 focused on the integration of technology in teaching, and the potential impact that incorporating technology such as mobile apps can have on enhancing multiliteracies in the classroom. The review of the relevant literature showed that this study would enable me to contribute to the most recent knowledge on how to integrate technology to enhance multiliteracy in the English language classroom.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In chapter 2, I focused on the relevant literature dealing with the topic of this study, namely, the use of mobile apps in English language education to enhance multiliteracies, providing a detailed description of all aspects applicable to the study. In chapter 3, I discuss the research methodology applied, starting with the research questions and the way in which the research questions were dealt with by the research methodology. I subsequently state the research questions and discuss the research paradigm, research approach, research design and research method, the trustworthiness of the study, and lastly, the ethical considerations taken into account.

3.2 RESEARCH QUESTIONS

The research questions and sub-questions formulated for this study guided my research as they allowed me to focus on the core aspects of the study, namely, mobile apps, English language education and multiliteracies. Focusing on these core aspects therefore enabled me to ascertain how the use of mobile apps can enhance English language education, with a focus on how such mobile apps can enhance multiliteracies in English language education. The following research questions and sub-questions, guided my research in this study:

Main research question:

- How does the integration of apps in the English language lesson transform multiliteracy?

Sub-questions:

- What are teachers' beliefs/perceptions about integrating technology/using apps?
- What strategies do teachers employ when integrating apps?

3.3 RESEARCH PARADIGM

As a researcher, one has to have the ability to comprehend and communicate one's beliefs regarding reality and the nature thereof, what one can know about reality and how one can go about attaining knowledge of reality (Abdul Rehman & Alharthi, 2016:51). A paradigm refers to a particular view of social reality which is used as a basis for research (Maree, 2016:52). It is a theoretical framework and an elementary belief system that involves assumptions about ontology, epistemology, axiology, methodology, and lastly, methods (Abdul Rehman & Alharthi, 2016:51). A paradigm provides a means for understanding and analysing reality (Abdul Rehman & Alharthi, 2016:51).

Ontology refers to assumptions regarding reality, the manner in which reality exists and what one can surmise about reality (Abdul Rehman & Alharthi, 2016:51). Thus, an ontological question provides an opportunity for researchers to investigate the kind of reality that exists (Abdul Rehman & Alharthi, 2016:51–52). Accordingly, ontology poses key questions such as whether or not human interpretations can exist independently from social reality, whether certain norms control societal behaviour, and whether or not a communal and amalgamated social reality exists (Maree, 2016:57).

Epistemology, on the other hand, focuses on the manner in which truths can be revealed and uncovered (Maree, 2016:67). Epistemology is “the branch of philosophy that studies the nature of knowledge and the process by which knowledge is acquired and validated” (Gall, Gall, & Borg, 2003, p. 13, as cited in Abdul Rehman & Alharthi, 2016:52). The first main argument of epistemology involves the relationship established between participants and the researcher, and how this relationship affects the extent of the researcher's objectivity (Maree, 2016:67). Another main argument involves how objective knowledge is, and to what extent subjectivity affects the objectivity of knowledge (Maree, 2016:67). Thirdly, epistemology involves the extent to which a researcher's findings can be generalised (Maree, 2016:68).

According to Hart (1971:29), axiology questions what individuals consider to be valuable, as well as the qualities of which values are comprised. It questions the degree to which individuals value interests, passions and actions (Hart, 1971:29),

questioning “the role of values and their influences on the knowledge creation process” (Biedenbach & Jacobsson, 2016:140). The term ‘axiology’ emerged as a means of attempting to combine and scrutinise many overlapping and pre-existing questions that were linked to the crux of goodness, obligation, acceptable behaviour and value (Hiles, 2008, cited in Biedenbach & Jacobsson, 2016:140).

The researcher chooses a methodology based on his/her worldview/paradigm. According to Ellen (1984, cited in Abdul Rehman & Alharthi, 2016:52), methodology may be defined as an articulated and theoretically informed approach when producing data. It therefore refers to the process of studying and critically analysing techniques for data production (Abdul Rehman & Alharthi, 2016:52). It assists the researcher in his/her determination of the type of data required for the study and the selection of data collection tools that will be most fitting for the purpose of the study (Abdul Rehman & Alharthi, 2016:52).

Based on the methodology that the researcher chooses, he/she must determine which methods (data collection tools) best suit or cater to the chosen methodology. (Abdul Rehman & Alharthi, 2016:52). Methods refer to ways in which data are collected and analysed, for example questionnaires and various types of interviews (Abdul Rehman & Alharthi, 2016:52). The methods applied in a research project are dependent on the project design and the researcher’s theoretical mindset (Abdul Rehman & Alharthi, 2016:52).

The paradigm on which this study is based is interpretivism underpinned by an epistemological philosophy. Epistemology focuses on the manner in which truths are revealed and determined (Maree, 2016:67). This study incorporated the three core arguments of epistemology: how the relationship between me (the researcher) and the participants could affect the study, the acknowledgement that the knowledge gained from the study would be affected by a level of subjectivity (and the steps taken to avoid bias in the study), and the degree to which my findings could be generalised and applied to future scenarios (Maree, 2016:67–68).

Within this epistemological approach, I focused on interpretivism (the axiological perspective), as it is an epistemology that takes subjectivity into account and rejects the assumption that “a single, verifiable reality exists independent of our senses”

(Abdul Rehman & Alharthi, 2016:55). As a researcher, I understood that the participants' views on the use of mobile apps, and how mobile apps can be utilised to enhance multiliteracy English language education, would be influenced by their unique social contexts and backgrounds (Hussey & Hussey, 1997, cited in Maree, 2016:61). Interpretivism also assumes that “[i]ndividuals interact with other individuals and society and ascribe meaning and names to different social phenomena” (Abdul Rehman & Alharthi, 2016:55). This was apparent in the current study when I utilised secondary data from a study conducted by De Jager (2018), where pre-service teachers communicated and collaborated with one another on the use of mobile apps in lessons and shared their experiences in this regard to build on each other’s knowledge of mobile apps.

Because I based the study on an epistemological paradigm and applied interpretivism and social constructivism to further guide the study, the research approach that I chose to work with was a qualitative one. A qualitative research approach allows for open-ended questioning and a less rigid approach as opposed to quantitative research. Quantitative research methods such as statistical analysis do not allow for the open-ended methods that qualitative researchers need to use for effective research (Elliot & Timulak, 2007, cited in Maree, 2016:53). Quantitative research methods would therefore not be conducive to what qualitative researchers do, as the aim of such research is to uncover unique theories/ideas (Flick, 2018:7).

3.4 QUALITATIVE RESEARCH APPROACH

Qualitative research values the context within which knowledge is generated and assumes that there is no single, finite reality (Braun & Clarke, 2013). Qualitative research interprets meaning that is subjective (Silverman, 2020:3) and values the various, unique perspectives and the diverse contextual backgrounds that participants bring to a study (Flick, 2018:6). Qualitative research is strengthened by applying the concept of trustworthiness and makes use of more open-ended questions as opposed to fixed questions so that participants are able to share their perspectives (Elliot & Timulak, 2007, cited in Maree, 2016:53). The aim of qualitative research is to discover and investigate new and innovative ideas or theories (Flick, 2018:7).

I applied a qualitative research approach while conducting this study, as the aim of the study was to interpret and analyse the opinions of educators when it comes to utilising mobile apps to enhance multiliteracies in the English language classroom (Flick, 2018:6). I valued the unique perceptions of each educator and used the subjective information obtained from the semi-structured interviews to identify critical aspects pertaining to the research. Multiple open and exploratory questions were included in the semi-structured interviews, which allowed educators to openly express their unique beliefs. Taking these multiple perspectives into account helped to ensure that bias was minimised, thus increasing the credibility of the study (Elliot & Timulak, 2007, cited in Maree, 2016:53). The use of a qualitative research approach allowed for the collection of the subjective data that were required to answer the main research question: “How does the integration of mobile apps in the English language lesson enhance multiliteracy?” Thus, the collection of the data I needed to research this topic effectively would not have been facilitated by a quantitative approach (Flick, 2018:7). Accordingly, a qualitative approach was necessary as it allowed me to apply open-ended research methods and to take the unique perspectives of the participants into account (Flick, 2018:7).

3.5 RESEARCH DESIGN: CASE STUDY

According to Gustafsson (2017, cited in Heale & Twycross, 2017), “a case study can be defined as an intensive study about a person, a group of people or a unit, which is aimed to generalise over several units”. Thus, it is an intensive and systematic investigation of rich data that may relate to different variables (Woods, 1980, cited in Heale & Twycross, 2017). A case study therefore values the opinions and beliefs of the participants when working with data. When conducting an individual case study, it allows for “detailed description and analysis to gain a better understanding of ‘how’ and ‘why’ things happen” (Ridder, 2017:282). Data collected from single case studies may enable the researcher to identify patterns and correlations in the data (Gomm et al., 2000, cited in Ridder, 2017:282).

Case studies investigate real-life phenomena in an in-depth manner and within the context in which they occur (Ridder, 2017:282). In this study, the intention was to investigate how educators utilise mobile apps to enhance multiliteracies in the English language classroom. Therefore, the group of people that participated in the case study

comprised five English high school educators from the same private school, who had immediate access to a variety of technological resources in the classroom, as they worked in a school with ample access to technology. The aim was to compile rich data that took into account the unique perspectives of each of the five educators with regard to the utilisation of mobile apps to enhance multiliteracies in English language education (Gustafsson 2017, cited in Heale & Twycross, 2017). Therefore, the fact that the educators were located in a technologically enriched environment meant that the data collected would reflect the utilisation of technology in the classroom.

Case-study research may be biased, as it is often tailored to meet the needs of the researcher and allow him/her to acquire specific information that will make the greatest contribution to the study. There is therefore a need to provide a holistic representation of the data (Cousin, 2005, cited in Heale & Twycross, 2017). To ensure that I minimised bias in this study, I chose to use a descriptive case study. This allowed me to gather detailed and diverse information from the semi-structured interviews with the participants and ensured that I collected detailed information that I could then analyse. Descriptive case studies also allow for versatility, thus allowing for the researcher's philosophical stance to be taken into account while providing a unique base for a study that can generate more insight into a certain area of enquiry (Birks, Franklin, Harrison & Mills, 2017). The use of a descriptive case study for the current study enabled me to conduct my research from the philosophical stance of epistemology and allowed me to generate unique and detailed insights into the use of mobile apps to enhance multiliteracies in English language education.

3.6 RESEARCH METHOD

The research methods applied in this study were methods typically used in qualitative research. As such, they included interviews, specifically semi-structured interviews and data analysis, which included the analysis of secondary data. The data generated through these research methods provided the data set for the study.

One of the research methods applied in this study was interviews, specifically semi-structured interviews. I conducted a semi-structured interview with each of the five educators (participants) in my study. These interviews allowed me to focus on specific areas pertinent to my study, whilst also allowing the participants to express themselves

freely (in order to minimise any bias that I may have had regarding the topic under study). The semi-structured interviews also led to obtaining new and innovative ideas from participants, which provided new and innovative perspectives on the use of technology and the use of mobile apps to enhance multiliteracy in English language education.

The information derived from the secondary data was obtained from the study conducted by De Jager (2018) which involved participatory action research (PAR). PAR allows the researcher to work with the participants in order to co-generate knowledge – knowledge is co-generated by group members via consistent communication and the discussion of findings (Baldwin et al., 2012:4). The secondary data gained from De Jager's (2018) study involved PAR in that pre-service teachers collaborated to co-generate information about mobile apps that can be used in the classroom. As part of the study, the pre-service educators shared their findings about the effectiveness and efficiency of various mobile apps/technology in the classroom, and were able to contribute to one another's findings, resulting in the generation of new, innovative ideas. The information drawn from De Jager's (2018) study, contributed to the overall findings of my study.

3.6.1 Research site and sampling

The study took place at a private school in South Africa situated in an urban area. It provides learners and educators with a great deal of technological resources and is well equipped, thus enhancing teaching pedagogy with access to information and communication technology (ICT). There are multiple ways in which the school utilises technological resources. For example, the school has constant access to Wi-Fi – all learners and educators are able to connect to the school's Wi-Fi in order to utilise the internet for various purposes. The internet connection is not affected by power outages, as the school is equipped with a large generator that turns on automatically when the electricity supply is turned off. All educators are supplied with laptops and projectors, so that technology can be incorporated into every lesson. Learners are also allowed to make use of their laptops and other electronic devices when working on tasks in the classroom. In addition, they are allowed to utilise their cell phones during the lesson (when given permission to do so by the educator). Learners and educators also have access to virtual reality (VR) headsets (there are a limited number of these

available and they must be booked well ahead of time). Educators have to incorporate VR into their lessons at some point during the term, irrespective of their subject. For example, they may use the VR headsets to simulate the Globe Theatre when teaching Shakespeare during an English literature lesson. Some of the classrooms are equipped with smartboards and/or large LED televisions – educators can use these to interact with learners during lessons and thus cater for various learning styles/preferences (e.g. videos and interactive educational games can be used to cater for learners who are audio-visual learners). The school also provides learners with an inclusive and diverse environment in which they have access to individual attention as the class sizes are relatively small (approximately 24–27 learners per class).

I made use of purposive sampling to select the participants for my study. Purposive sampling entails the selection of participants with the aim and purpose of the study in mind (Maree, 2016:198). As the topic under study was how mobile apps can be utilised to enhance multiliteracy in English language education, the participants had to meet certain criteria: they had to be in-service educators with at least five years of experience, they had to be teaching English Home Language at a high school level and they had to have adequate access to technology. The most convenient and effective means of choosing participants was therefore to choose participants from the same school that I worked at, so that I could communicate regularly with them. I also knew that the participants had ample access to technological resources, and I could find five in-service English educators with at least five years' teaching experience to participate in the study.

3.6.2 Data generation methods and data documentation

The data utilised in this study were derived from two sources, namely, the semi-structured interviews and secondary data taken from De Jager's (2018) study.

Semi-structured interviews

There are various types of interviews that can be utilised to generate information in a study, namely open-ended, semi-structured and structured interviews (Maree, 2016:93). I applied semi-structured interviews in this study, because they allow the researcher to tailor the interview questions so as to gather information for the topic under study, while giving participants a certain level of freedom to convey their unique

viewpoints and insights (Maree, 2016:93). The use of semi-structured interviews was therefore ideal for this study, as it allowed me to formulate 22 questions that I could pose to participants in order to generate information about the way the participants utilised mobile apps in the classroom to enhance multiliteracy in the English language classroom.

I subsequently interviewed five high school English educators using semi-structured interviews. From these five interviews, I was able to derive linguistic data which encompassed the unique perspectives and worldviews of all the educators who participated in the study. These perspectives were taken into account when I interpreted the data (Maree, 2016:53; Flick, 2018:6). The initial plan for the semi-structured interviews was that they would be approximately 45 minutes in length, and that as part of the process, the participants would provide two lesson plans each (one lesson plan for an English language lesson and one for an English literature lesson). I initially wanted to obtain physical copies of the lesson plans so that I could analyse them and add the themes that I derived from these lesson plans to my study. When I commenced with the interviews, however, I realised that this was not going to be possible, as the educators did not make use of physical lesson plans to conduct their lessons. I therefore had to adapt that aspect of my study, deciding instead to discuss the way the educators went about presenting language and literature lessons in the interviews, rather than obtaining physical copies of the lesson plans. I also had to interview an educator who had taught English Home Language but was not doing so at the time, because an educator who I was meant to interview could not participate in the study. Another aspect that changed was the length of each interview. Owing to time constraints and the length of the responses obtained from the participants, all of the interviews lasted less than 45 minutes.

The interview questions were designed in such a way as to gather as much relevant information as possible (relating to mobile apps, multiliteracies, English language education) on the use of mobile apps to enhance multiliteracies in English language education. The semi-structured interviews allowed for the beliefs and views of each educator to be recorded, creating a scenario where they felt comfortable voicing their unique opinions.

By applying a case study method, I was able to distil the topic of the study into 22 manageable interview questions that participants could answer separately in the interview (Heale & Twycross, 2017). I was also able to have a discussion with each of the five educators about the way they taught an English language lesson and an English literature lesson.

In order to record the interviews and ensure that the information was recorded accurately, I decided to use two devices. Accordingly, I used both my cell phone and Microsoft Teams to record the interviews. The use of two methods here was to ensure that any data collected were safeguarded and easily accessible – if the data were lost on one device, I knew that I could access them via the other. Consequently, the normal recording function on my cell phone was used while also utilising Microsoft Teams. In the latter case, I ensured that the video function was turned off (as I wanted to reassure the participants that all information collected was confidential). Once the meetings (interviews) on Microsoft Teams ended, I downloaded the recordings of the interviews and saved them to my computer. During the interviews, I also made note of key aspects that stood out while the interviews were taking place. I subsequently sent copies of all of my recordings to my supervisor in order to ensure that she had access to all my information and that it was stored securely. The data derived from the semi-structured interviews, as described above, were then labelled ‘data set 1’.

Secondary data

Another form of data generation was the analysis of the pilot study conducted by Prof. De Jager, specifically, the analysis of the focus group interview with pre-service teachers about mobile apps. After reading and analysing the transcript from this interview, I was able to identify specific information and various themes that I could incorporate in my study. I was also able to use the data generated to compare the themes that arose in this interview to the themes that arose in my interviews with the educators in my study. The data derived from the study conducted by Prof. De Jager were then noted as ‘data set 2’.

3.6.3 Data analysis and interpretation

For the purpose of the study, deductive thematic data analysis was used. As a researcher, I had identified specific areas that I wanted to focus on and therefore

approached the data analysis with the intention to find out more about them. The qualitative data gathered during the interviews were subsequently analysed using a deductive approach (Abdul Rehman & Alharthi, 2016:56), with coding and thematic analysis being applied in order to derive theory from the data (Grix, 2004:108, as cited in Abdul Rehman & Alharthi, 2016:56). I also approached the data analysis with the mindset that I had to be as objective as possible when studying the data, and that I had to try and disregard any preconceived ideas I might have regarding the topic under study when analysing and/or interpreting the data.

In analysing and interpreting the data, I ensured that I referred to my conceptual framework along with the key terminology/theories therein, as well as the key theories discussed in the literature review (which all contributed to the construction of my conceptual framework). This included social constructivism, multilingualism, translanguaging, cooperative learning, communicative competence, technological and pedagogical content knowledge (TPACK), and specifically, multiliteracies. While focusing on the key terminology and themes within the instructional framework, I also focused on the keywords in the topic of the study (mobile apps, multiliteracy, English language education). Owing to the specific focus on multiliteracies, I focused intently on the four pillars of multiliteracies when analysing and interpreting the data, as the core focus when analysing and interpreting the data involved mapping all of the data to the four pillars of multiliteracies.

Firstly, I transcribed the verbal content of the interviews and then focused on the transcripts in order to analyse the data contained therein. I then read the transcriptions carefully to gain a general idea of the information derived from the interviews. The semi-structured questionnaire prepared for the interview consisted of 22 questions; in addition, each interview included a short discussion about one English language lesson plan and one English literature lesson plan. I subsequently went through the interview transcripts individually, highlighting aspects relating to the topic under study (specifically, the keywords in the main research question and the four pillars of multiliteracies). I then worked with the responses to each of the 22 questions (as well as the discussion of the lesson plans) individually, subsequently comparing the participants' responses and trying to ascertain key similarities and differences between the answers provided. I also compared and analysed the responses regarding the

lesson plans for the English language and literature lessons provided by each of the five educators. While doing so, I applied emergent coding and then categorised the data into meaningful units (Maree, 2016:116). Next, I highlighted aspects of the data that were relevant to or significant for my study, and applied colour-coding where possible to assist in identifying categories in the data. I then allocated the data to the various categories and derived specific subthemes that related to the study. I subsequently identified the main themes, which I labelled in my own words, constantly referring to the keywords in my study topic, the conceptual frameworks of the study (i.e. social constructivism, multilingualism and multiliteracies) and the four pillars of multiliteracies. Once I had compared the interviews with one another, I read over all of the data again to ensure that I had not missed anything significant (data set 1).

I then moved on to the analysis of the transcript from the study conducted by De Jager (2018), reading it carefully in order to gain a general idea of the information that arose from the focus group interview. After reading the transcript, I used emergent coding to divide the information derived into meaningful units relating again to the keywords in the topic of the study, the conceptual frameworks applied in the study and the four pillars of multiliteracies. I then compared the themes derived from Prof. De Jager's (2018) transcript to the themes that arose in the transcripts of my semi-structured interviews. In cross-referencing the themes that appeared in my study and those that appeared in Prof. De Jager's study, I was able to identify similarities, differences and significant aspects. This secondary data source (data set 2) gave me an additional source with which I could cross-reference my data set.

3.7 TRUSTWORTHINESS

Trustworthiness is the foundation of quality assurance in any qualitative study, and assures that the analysis of the data, the findings and any conclusions that have been drawn from the study are reputable (Maree, 2016:123). According to Sandelowski (1993, as cited in Gunawan, 2015:10), trustworthiness is essential in reassuring the reader and allowing them to feel that all the practices and procedures involved in the study have been made transparent, clear and auditable. The aim of trustworthiness is to validate the findings derived from research so that these findings may be worthy of consideration by others (Lincoln & Guba 1985, cited in Elo et al., 2014:2). To ensure trustworthiness, the researcher has to account for every step taken in the data analysis

process (Maree, 2016:123). Trustworthiness involves the consideration of four criteria, namely, “credibility, transferability, dependability and confirmability” (Guba, 1981, as cited in Maree, 2016:123).

3.7.1 Credibility

Credibility relates to the degree to which readers will trust the findings of a study. Accordingly, the researcher should ensure that the findings are congruent with reality to the greatest extent possible (Maree, 2016:123). Credibility also involves the way the researcher defines and identifies the participants for a study – this has to be done as accurately and meticulously as possible (Elo et al., 2014:2). In order to ensure credibility in a study, the researcher must be meticulous about the data collection process and ensure that the correct sampling method is used (Lincoln & Guba, 1985, cited in Maree, 2016:123). Credibility can also be built by forming a relationship of trust and respect with one’s participants, and by triangulating the data (Lincoln & Guba, 1985, cited in Maree, 2016:123). The researcher can also ensure credibility by using sound research methods, aligning the research design to the research questions, and the methods and research questions to the theoretical underpinning (Maree, 2016:123).

In this study, I ensured that I described my participants in as much detail as possible (without revealing their identities). I did this by discussing aspects such as the length of time that they had been teaching, the qualifications they had obtained, and the number of years they had been teaching, as well as detailing any other aspects that would have an impact on the study. I also ensured that I used established research methods and a large variety of sources from which I could gain reputable and reliable information.

3.7.2 Dependability

Dependability has a direct relation to reliability in a study (Gunawan, 2015:10). It involves the level of stability of data when scrutinised under various conditions over a specified time period (Elo et al., 2014:2). Dependability is evident in the research design and in its implementation, and thus the researcher has the responsibility of meticulously tracking every step in the data analysis process (Maree, 2016:124). This allows the reader to understand the justification for the researcher’s methods for

collecting and analysing the data, as well as the findings that the researcher details in the study (Maree, 2016:124).

During the study, I tracked every step of how I collected the data from the five participants, how I went about analysing the data (reviewing the data collected, looking for recurrent themes in the data (thematic analysis), coding the data, and interpreting the findings). I also tracked every step in the data analysis process so that readers could follow the rationale behind it.

3.7.3 Confirmability

Confirmability is related to how congruent the findings of a study are with reality (King & Stahl, 2020:26). It therefore relates to the objectivity and neutrality of a study – this focuses on the extent to which participants have influenced the study, ensuring that any bias on the researcher’s part is minimised (Elo et al., 2014:2; Lincoln & Guba, cited in Maree, 2016:124). To ensure confirmability, there must be evidence of a valid connection between the ideas expressed in the study and the relationship between them (King & Stahl, 2020:26). Credibility may also be considered to be “a construction on the part of the reporter(s) and the subsequent reader(s)” (King & Stahl, 2020:26) and can be promoted and enhanced through various methods of triangulation (King & Stahl, 2020:26). Triangulation involves the utilisation of multiple sources of information and/or methods when conducting a study in order to develop identifiable and reliable patterns (King & Stahl, 2020:26). Another way of promoting credibility in a study is for the researcher to discuss or admit to any predispositions he/she may have that may be related to the study (Maree, 2016:124). This minimises the effect that any bias on the researcher’s part may have on the study (Maree, 2016:124).

In this study, I ensured that I outlined and discussed any predispositions that I had relating to aspects of the topic, such as the use of apps and the effect that apps could have on multiliteracy in the classroom, particularly in the subject of English. I also tried to utilise triangulation to the greatest possible extent – this involved the utilisation of different methods of data collection. Additionally, in the semi-structured interviews I held with each of the five participants in my study, a list of set questions was used as a guideline. I also made use of information drawn from a pilot study conducted by De Jager (2018), cross-checking the ideas that I derived from my study with the ideas

derived from De Jager's study. When cross-checking the ideas, I discussed any similarities and differences that I noticed in the data sets, and acknowledged any significant differences that I came across. This allowed me to form a more objective and inclusive depiction of the study findings.

3.7.4 Transferability

Transferability relates to the degree to which the findings of a study can be transferred to other groups or contexts (Elo et al., 2014:2). It relates to the idea "that patterns and descriptions from one context may be applicable to another" (King & Stahl, 2020:27). This does not imply that the findings of one study should correlate precisely with the findings of a similar study, but that the original study has some degree of impact in the sense that one may be able to correlate some of the ideas from the original study to other, subsequent contexts (King & Stahl, 2020:27). Transferability therefore allows readers to formulate connections between various aspects of the study and their unique experiences of the same or similar situations (Maree, 2016:124). In order to ensure that transferability is possible, the researcher needs to provide a thick description of the context (such as the site at which the research took place), as well as a thorough description of the participants involved in the study (King & Stahl, 2020:27). The researcher must also provide sufficient detail about the data collection process and the duration/timeframe of the study (King & Stahl, 2020:27).

In this study, I ensured that I discussed every aspect of the data collection and interpretation process. I also provided a thick description of the contextual aspects of the study and the participants involved. I specified that the study was conducted at a private, well-funded, well-resourced school in South Africa that accommodated learners from the age of two to 18 years. I also discussed the easy accessibility of technology in the school, and that a vast number of resources were at the teachers' and learners' disposal. Regarding the participants in the study, I ensured that I provided as much information on each participant as possible, without revealing the identities of the participants. Additionally, participants' teaching experience and other relevant characteristics were discussed.

3.8 ETHICAL CONSIDERATIONS

Ethical considerations are imperative in ensuring that a study is conducted without any risk to the participants under study. Qualitative studies, in particular, should fully consider the ethics involved, as they comprise in-depth research that often includes interviews with the participants, for example (Arifin, 2018:30). Study participants have to be made to feel as safe as possible, knowing that researchers are acting responsibly and ethically in conducting the research. It should therefore be ensured that any potential risk of harm to participants in the study is minimised. Accordingly, the researcher must obtain participants' informed consent, ensure participants that their identities will not be revealed, avoid deceiving participants in any way, and inform participants that participation is completely voluntary and that they have the option to withdraw at any time (Lund Research Ltd, 2012).

I was constantly aware of and took into account all ethical considerations applicable to the study both before and during the course of my research. Firstly, I applied for ethical clearance based on my supervisor's project using the existing ethics number (UP 18/08/01). This was subsequently granted by the University of Pretoria, thus allowing me to proceed to conduct my research. I approached the principal of the school where I was working, providing them with a letter informing them about the research I wanted to conduct, an outline of the study and a detailed description of the research process. The principal subsequently consented to the research, and I was then able to approach the potential study participants. In doing so I handed out letters explaining the study and detailing the research procedure to each of the participants, and allowed them to consider whether or not they were willing to participate in the study. The five participants subsequently agreed and signed the consent forms that were attached to the letters. I was able to schedule interviews at the school with each of the participants in a timeslot that was convenient for them. All the participants agreed to answer the questions posed in my study, and agreed to have the semi-structured interviews recorded. Participants were made aware of all aspects of the study and participated in the semi-structured interviews willingly and with their full consent.

Another aspect that I had to consider with regard to the participants in the study was ensuring that their identities were not revealed and were protected at all times (Maree,

2016:44), and that they would remain anonymous in the study (except to me, as the researcher). I therefore made sure that when I conducted my interviews, I did not mention the participants' names at any time and ensured that they remained anonymous in the study. Pseudonyms were used for all participants (who were referred to as Participant 1, Participant 2, etc.) to ensure confidentiality. I also ensured that I followed all the ethics standards prescribed by the University of Pretoria's ethics committee.

When conducting the semi-structured interviews with each of the five participants, I tried to ensure that I gave them the opportunity to fully express their beliefs/opinions and ideas, so that their unique perspectives were included. I also tried to ensure that I did not bias their responses in the way in which I asked the questions. I did not want to contribute too much information in the interviews, as I did not want to lead the educators to answer in a specific way or make them feel that they had to provide certain ideas. Although I tried to minimise any bias on my part as much as possible, it is inevitable that some form of bias may have still been present.

I also had the responsibility of adhering to the South African Schools Act, that is, to ensure that I did not hinder the teaching or learning practices in the school in any way. No learners were involved in this study – the five chosen educators were my participants. In this way, I did not disrupt the education of learners in any way. I also ensured that the semi-structured interviews were scheduled at times that were convenient to the educators and did not disrupt their teaching practice in any way.

3.9 CONCLUSION

In this chapter, I firstly discussed the research questions (main research question and sub-questions). Secondly the research paradigm, research approach, research design, the research method (focusing on the research site and sampling, data collection methods and data documentation, and data analysis and interpretation), and the trustworthiness of the study were discussed. Finally, I provided an overview of the ethical considerations that were made. In this way, this chapter provided details on how I went about the collection, analysis and interpretation of the data I collected, while discussing the trustworthiness and ethical considerations related to the study. The choice of using an interpretivist paradigm, along with the choice of the qualitative

research approach, a case study research design, and the use of semi-structured interviews and secondary data, was intentional so as to accommodate the subjective and qualitative nature of the study.

CHAPTER 4

FINDINGS

4.1 INTRODUCTION

In chapter 3, I discussed the research paradigm, the research approach, the research design, research method, trustworthiness of the study and the ethical considerations. In chapter 4, I start with a description of the five study participants (qualified educators). I then present the findings gleaned from the following data sets: semi-structured interviews (data set 1), and the document analysis of the group interview with pre-service educators (data set 2). Lastly, I critically discuss and interpret the findings of the study.

4.2 DEMOGRAPHIC PRESENTATION OF PARTICIPANTS

There were five participants in this study, all female, because the English department at the school at which the study was conducted comprises female educators only. Therefore, this choice was not purposeful. The reason for restricting the study to five participants only was because the educators had to be part of the English department at the school, which is small. However, despite the small number, I attempted an in-depth exploration and provided rich descriptions of the data. I also compared the data gleaned from my study (data set 1) to another data set (data set 2) to explore the use of mobile apps to enhance multiliteracy in English language education.

Participant 1 is a female educator who, at the time of the study, had been teaching for a total of eight years, with seven years English teaching experience at high school level. She holds a Bachelor of Education, specialising in English and Psychology. She was included despite the fact that she was not teaching English at the time the study took place. Participant 2 is a female educator with 40 years' teaching experience. She holds a master's degree in education and has taught English at high school level for her entire career. Participant 3 is a female educator with a Bachelor of Arts degree, specialising in English and History. She had been teaching for approximately 20 years, all of which involved English teaching. Participant 4 is a female educator who undertook the attorneys' admission examination and is therefore a qualified attorney. She also holds a Postgraduate Certificate in Education and had been teaching for

approximately eight and a half years, with the same amount of time spent teaching English. Participant 5 is a female educator with a Postgraduate Certificate in Education specialising in English and Life Orientation. She had approximately 13 years of teaching experience, with five years of English teaching experience. A summary of the demographic details of the participants is given in table 4.1:

Table 4.1: Summary of demographic details of participants

Educator participant	Highest qualification	Teaching experience (years)	English teaching experience at a high school level (years)
1	Bachelor of Education (English and Psychology)	8	7 (did not teach English in 2023)
2	Master's in Education	40	Approximately 30
3	Bachelor of Arts (English and History)	Approximately 20	Approximately 20
4	Attorneys' admission examination and Postgraduate Certificate in Education	8.5	8.5
5	Postgraduate Certificate in Education (English and Life Orientation)	Approximately 13	5

Note: All participants were female

4.3 DATA PRESENTATION

The data from the semi-structured interviews are presented below. They have been separated into two sections: The first section consists of a summary of the participants' responses to questions 4 to 22. The second section summarises the examples of language and literature lessons provided by the participants.

4.3.1 Participants' responses to interview questions

Question 4: What is your understanding of the concept of multiliteracy?

Participant 1: Using different methods to cater for the different learners in the classroom.

Participant 2: The use of multiple texts in teaching a language (e.g. hard copies and visuals) and technologies (e.g. cell phones). It is how one utilises technology in the classroom.

Participant 3: Using various sources, technologies, and being willing to implement new ideas and techniques that arise – new platforms that are launched that one can use in teaching.

Participant 4: The use of various devices, the various ways that learners learn and how educators work with different learning styles.

Participant 5: Accommodating various learning styles in a classroom and using audio and visual technologies to cover multiple learning styles in one's teaching pedagogy.

Question 5: How often do you use technology in the classroom? (Please choose one: To a minimal extent; to a moderate extent; to a great extent)

Participant 1: To a great extent

Participant 2: Minimal to moderate extent (closer to moderate)

Participant 3: Moderate extent

Participant 4: Great extent

Participant 5: Great extent – uses a variety of different types of technology, often different apps, websites and programmes in an attempt to motivate students to use technology on a daily basis.

Question 6: How often do you use mobile apps in the classroom? (Please choose one: To a minimal extent; to a moderate extent; to a great extent)

Participant 1: To a great extent

Participant 2: Minimal extent – she said that she probably does not use apps nearly as much as she should/could.

Participant 3: Moderate extent (interpreting mobile apps to be apps used on one's phone, for example, having learners look for three adverts online from different home pages, and then analyse the adverts and compare the home pages).

Participant 4: Great extent

Participant 5: Great extent – using Microsoft Teams to conduct assessments, convey important messages to students and staff, and to arrange video calls during Covid-19; YouTube; Google; using Thesaurus and Dictionary apps (can do an entire lesson on the appropriate use of those apps followed by a quiz).

Question 7: What are your beliefs/attitudes when it comes to using technology/mobile apps in the classroom?

Participant 1: Positive – it is about “keeping with the times of the generation” – it is nice for learners to have access to various tools as opposed to just working with textbooks.

Participant 2: It has changed over time and later in her life – Covid-19 made her realise the potential of technology (she realised the potential of her laptop – it can be used for more than sending emails and entering marks). She has always understood that technology is vital owing to the learners educators teach, but also that one becomes set in one’s ways.

Participant 3: Its effectiveness depends on how it is used – “it can be very effective”, but that it is not a case of simply letting them watch a video, but “how you use those apps and technology”.

Participant 4: One has to keep abreast of the times – she believes that learners have become more visual over the years. Teachers have to find means of connecting with learners on their level – mobile apps are a way for learners to utilise something that they are familiar with.

Participant 5: Positive – technology/mobile apps complement and enhance lessons and the quality of learning (when used constructively). She is open to new ways of using technology in the classroom.

Question 8: Do you believe that mobile apps can be used to enhance education?

Participant 1: Yes – it falls in line with keeping up with the current generation and it enables educators to make the fact that learners are constantly on their devices a positive thing – it encourages learners to engage in lessons using their devices, creating a positive learning environment.

Participant 2: Yes – mobile apps can be used to enhance education, but she does not fully understand how, as she does not really test apps.

Participant 3: Yes, however, they must be utilised effectively.

Participant 4: Yes – with so many diverse apps available on an international scale, to stick to a set education system would not be wise when the internet provides us with a whole new world of accessibility.

Participant 5: Yes – she feels one has to move with the times as technology develops. Educators should try and grow with students, and this is not only with regard to books, but also by utilising various technological devices.

Question 9: Would you be willing to incorporate mobile apps in your classroom more often?

Participant 1: Mobile apps are already utilised often enough.

Participant 2: Yes – she is willing to learn more about the apps available and how to use them. Even though she does not have a natural aptitude for technology, the more she practises using things, the better she becomes at it.

Participant 3: Yes – if appropriate apps are available.

Participant 4: Mobile apps are already utilised often enough – she added that “old school learning is also necessary”.

Participant 5: Yes, provided that she feels well-trained and prepared (confident about how to integrate apps into a lesson).

Question 10: What strategies do you currently use to enhance multiliteracy in the classroom?

Participant 1: Edu-board (for multiple textbooks), YouTube, visuals, models

Participant 2: Microsoft Teams, YouTube, learners’ devices

Participant 3: Microsoft Teams (recording lessons and uploading documents), PowerPoint slides, YouTube

Participant 4: Visual aids, verbal instruction, taking notes (pen and paper), YouTube, PowerPoint slides, apps on phones, variety of seating plans and types of seating (gym balls, etc.)

Participant 5: Lessons incorporate a great deal of discussion (where learners contribute to the conversation), educational videos to reinforce learning, group work, and working in different learning spaces

Question 11: What strategies do you use when using technology in the classroom?

Participant 1: Using the Edu-board to write notes and Snappily to highlight in textbooks.

Participant 2: Microsoft Teams, YouTube

Participant 3: Using scenes from different films for the same play (such as *Othello*) and utilising YouTube for readings of poems, etc.

Participant 4: Utilising the whiteboard for visuals and audio, asking learners to use their phones (completing quizzes and tests; using the dictionary app as opposed to hard copies of dictionaries)

Participant 5: Utilising the laptop and projector, uploading content and quizzes on Microsoft Teams, allowing learners to do research on phones, and allowing learners to watch videos to reinforce their understanding. Both she and her students are involved in initiating the use of technology.

Question 12: What strategies do you use when using mobile apps in the classroom?

Participant 1: Using Edu-board and Snapplify

Participant 2: Very few strategies – utilising learners’ mobile devices

Participant 3: Learners using their own devices and look at blogs on their phones – gives learners parameters and warns them against aspects such as ensuring that they don’t sign up to anything or provide personal information.

Participant 4: Allowing learners to use their own devices to access apps in a controlled setting – monitoring learners by walking around the classroom and constantly interacting. Learners are adept with apps and require little guidance/training.

Participant 5: Learners using their own devices, displaying content via the projector, Microsoft Teams, and the dictionary app. This relates to a combination of her and the learners using the apps.

Question 13: Have you used any form of technology in conducting assessments?

Participant 1: Microsoft Forms – multiple choice and, occasionally, written assessments

Participant 2: Microsoft Forms – online assessment became a necessity when educators had to work from home. She still uses conventional means of assessment. Chat boxes and AI are becoming more prominent, and educators have to learn about such technologies.

Participant 3: Using Microsoft Teams for quizzes and assignment submissions.

Participant 4: Microsoft Teams quizzes, digital presentations

Participant 5: Microsoft Teams for quizzes and assignment submissions (this also helps her to track various aspects, such as when learners submit late assignments).

Question 14: If you have used technology in conducting assessments, have you noticed an improvement in results?

Participant 1: Yes – especially if assessments are done at home.

Participant 2: Has not been used effectively enough to make a determination.

Participant 3: Participant cannot say definitively that she noted an improvement in results in conducting online assessments.

Participant 4: Yes – learners are familiar with technology and enjoy using it – they find it easier.

Participant 5: There has been an improvement for some learners, but not all. She does sometimes feel that learners prefer to use pen and paper and have that tactile sensory stimulation when completing assessments. However, it does help some learners with the marks for their assessments.

Question 15: Have you noticed a change in learners' behaviours when using technology/mobile apps in the classroom? (Please elaborate).

Participant 1: Yes – they become excited (view it as something fun).

Participant 2: Yes – it empowers them and makes them feel confident, as they tend to use technology more than adults.

Participant 3: Yes – learners show greater interest and can relate to technology, as they look at it daily.

Participant 4: Yes – learners are more eager to work and engage well, but one is not always sure what learners are doing on their devices. However, learners do not distract one another as much when using technology.

Participant 5: Yes – learners are positive about using technology/mobile apps, and learners' lives are centred around technology – learners are all technologically driven, especially in high school, and using technology is a way in which to relate to the learners.

Question 16: Have you noticed a change in learners' level of interest when using technology/mobile apps in the classroom? (Please elaborate).

Participant 1: It has to be used for short periods of time, or else they veer off-task and utilise personal apps.

Participant 2: Yes – if they are involved in the process. Today's generation is able to multitask and can sometimes do so effectively, but there are instances

where learners may lose interest when using technology. It can be effective in elevating their interest if the educator makes an effort to stop and interact with the learners.

Participant 3: Yes – learners show greater interest and can relate to technology.

Participant 4: Yes – they view it as a reward, even for assessments.

Participant 5: Yes – it improves their level of interest and helps to reinforce the content.

Question 17: What technologies do you use most often?

Participant 1: Edu-board and learners' own mobile devices

Participant 2: Microsoft Teams and sometimes learners' own mobile devices (spontaneous use thereof)

Participant 3: Microsoft Teams, PowerPoint slides, YouTube, learners' own mobile devices

Participant 4: YouTube, Microsoft Teams quizzes

Participant 5: Laptop and projector, various apps on laptop, learners' own mobile devices

Question 18: Which mobile apps do you use most often?

Participant 1: Snappily and YouTube

Participant 2: She cannot specify which apps she uses most often, but she does use Pinterest and will often come across apps as a pure fluke. She is not aware of the number of apps that exist.

Participant 3: Learners use their smartphones (participant was not sure what was meant by mobile apps).

Participant 4: Offline Advanced English Dictionary app – the app has games and quizzes too, which learners enjoy.

Participant 5: Microsoft Teams, YouTube, Google

Question 19: What training would be useful for you regarding the usage of technology/mobile apps?

Participant 1: To be made aware of current apps and technologies

Participant 2: Step-by-step training (to see the value of the technology) on a regular (monthly) basis and having someone share what they have discovered and demonstrate how to use such technologies.

Participant 3: Regular or yearly updates on new technologies and apps available

Participant 4: Training involving Chat GPT and plagiarism apps

Participant 5: Being kept abreast of new educational apps and having training on how to use various technologies (like Canva) – she believes that certain technologies can be used to a greater extent than she is aware of.

Question 20: Do you think that mobile apps can allow you to better cater for more learning styles in the classroom? (Please elaborate)

Participant 1: Yes – they cater for various kinds of learners, for example, visual learners can use the abovementioned apps for a better learning experience.

Participant 2: Yes – there are many opportunities, for example, virtual reality (VR). VR goggles can bring learners closer to the content that they are being taught.

Participant 3: Yes – one has to be willing to try new teaching methods to attain learners' interest. One cannot keep using “the same old methodology”. One should still make use of taking notes in books.

Participant 4: Yes – it provides a balanced approach, catering to audio-visual learners and learners who prefer pen and paper.

Participant 5: Yes – it assists educators in accommodating various learning styles (such as audio-visual learning)

Question 21: Do you think that mobile apps can allow you to utilise more teaching styles in the classroom? (Please elaborate)

Participant 1: Yes – it caters for various kinds of learners.

Participant 2: Yes – allows for a more learner-centred approach. Learners can often lead the lesson in a new direction. People can now become journalists, columnists or online influencers, for example, with the access they have to technology nowadays.

Participant 3: Yes – allows for different teaching styles, however, other teaching methods are still useful and could assist in expanding learners' knowledge, interest and understanding.

Participant 4: Yes – one must adapt one's teaching style to include technology – she also noted that it allows one to utilise more teaching styles naturally.

Participant 5: Yes – it has changed the learning environment from “parrot fashioned” learning to one with more discussion and perspectives. It provides a wider scope in which multiple skills are encompassed.

Question 22: What is your overall attitude about the utilisation of mobile apps to enhance multiliteracy in your classroom? (Please elaborate)

Participant 1: Positive attitude – restricted use of their own devices. When making use of her own devices, other learners who do not want to use a textbook can use the Edu-board instead.

Participant 2: Attitude changed from feeling overwhelmed to positive over the years (realising that its capacity is great) – if educators are serious about their craft, then they have to relook at how they can make things more interesting for learners and realise that lifelong learning is crucial.

Participant 3: Attitude is neutral and dependent on the way technology/apps are used – engagement and feedback is needed for it to be successful. Learners need to explain how it has benefited them.

Participant 4: Positive attitude – educator believes mobile apps are very valuable, enhance multiliteracy, and reiterated that it would not be wise to ignore the use of such apps and stick to old school teaching methods.

Participant 5: Positive attitude – it has provided educators with the ability to cater to multiple learning styles (such as visual learning) and move away from old-fashioned teaching methods, where learners listen and take notes.

In addition to the 22 questions, participants were also asked to describe one language lesson and one literature lesson that they had taught. I present their lesson descriptions below.

4.3.2 Lessons provided by the participants

Participant 1 provided an overview of a literature lesson that she had done with learners. She said that if they were studying a novel, she would provide an introduction as well as certain background information on the author. She also stated that she used “pictures of what these people look like and [would] show them to the learners so they can put a face to what’s been written”. She would then start reading the novel and allow different learners to read. She and the learners looked up vocabulary that learners were unfamiliar with and discussed aspects of the novel that learners could identify with. These were then elaborated on.

The participant described a language lesson as follows: she would start off with an introduction to let learners know what they were going to cover in that lesson and would then go straight into the body of the lesson. She would have a discussion about anything learners didn’t understand and allow them to share their ideas with the class.

When asked to share her final thoughts regarding the use of mobile apps in English language education as a whole, she said that “it can be a great thing if it is contained”, especially when learners use their own devices. She also said that measures should be implemented to ensure that learners only use the apps that they are supposed to be using.

Participant 2: With regard to a literature lesson, participant 2 stated that it would be difficult to talk about one lesson in isolation and that different lessons have different sequences, for example there are lessons for which a certain process has to be followed – here, she used *The Tempest* as an example (work that she was completing with the Grade 12s). She said that for a lesson like that, she would follow a certain procedure in order to cover all the work necessary for the matric exams. She stated that when working with Grade 12s, the lessons had to be exam-oriented because you have to ensure that they are prepared for the exams, and she could therefore not go into as much detail with regard to creative questions as she could go into with learners in Grade 9 or 10, for example. She added that she could not necessarily have as much fun with Grade 12 lessons as she could with Grade 9 or 10 lessons, and that if she were to do *The Tempest* with Grade 9 learners, she would tell them to imagine that they were on a ship and involved in a shipwreck as a result of a terrible storm, and ask

them how they would feel about it. She stated that there was so much depth that she could go into with regard to teaching *The Tempest* to Grade 12s, but that one cannot go through everything that one wants to, as there are time constraints. She also mentioned various cartoons that one can find on Pinterest that illustrate what happens in different plays. She added that there were times when she would pause and look at things like voyages of discovery at the time and discuss various people who went on such voyages. She would then relate this to *The Tempest* because Prospero acted like a coloniser some of the time, and that if she did not go over colonialism and its relevance to the play, the lesson would not be as effective. When colonialism came up in discussion, she related it to South Africa and the fact that South Africa is a colonised country, which would then stimulate more discussion among the class. She also stated that what she covered in the lesson depended on the climate of the lesson and that she never taught a literature lesson in isolation. She added that she would try and find areas where learners could position themselves in the discussion and relate to the lesson in some way. She ended by saying that she did utilise things like YouTube and TED talks, and that it was very important for her to position learners within the literature itself, as she wanted to help learners to effectively find their position regarding the subject under discussion.

When asked about an example of a language lesson, this participant stated that she would generally teach language only when necessary and focus on what learners needed to know. She added that there are times when one must engage with language to a greater extent, for example providing learners with texts that they had to edit. She stated that such exercises allowed learners to identify specific aspects of language and punctuation that they would need to revise, and that she would then go over those aspects with the learners. When looking at summaries, for example, she stated that she would move from a simple level and build up to a concrete level. She also stated that she would use technology to show learners how to change the format of summaries into various documents, for example changing a traditional summary into a speech or an email. This meant that learners were not only paraphrasing the original text to form a summary, but were also creating a new type of text.

Participant 3: When asked to provide an example of a language lesson, participant 3 stated that for a language lesson on different types of sentences, she would use the

image of a train and link that to sentence types. She said that one can compare a sentence to a steam train, liken the main engine to your main clause and then link it to the subordinate clauses, and that the coupling would be compared to the conjunctions joining the subordinate clauses to the main clauses. She said that she would provide them with simple sentences and tell them to form a compound or complex sentence from the simple sentences to make sure that learners understood the difference when working with compound and complex sentences. Once she knew that they understood, she would then discuss various subordinate clauses and phrases so that learners could understand how a phrase differs from a clause. She would then provide learners with exercises to see if they understood what she had gone over with them.

When asked to provide an example of a literature lesson, she mentioned the various scenes that she would show from Shakespearean plays that she had mentioned earlier in the interview. She then used a poetry lesson as an example and said that she would look at the poem with learners and ask them how they felt about it. She stated that she would ask learners to relate certain ideas in the poem to their own lives, for example, she would ask how they perceive death and then speak about a bucket list and relate that to what they wanted to do in the future. She said that she allowed them to create a bucket list of all the things they would want to do if they knew they only had a certain amount of time left to live. This would all happen before she introduced the actual poem. In the past, she used an example of a poet who knew he was going to die from tuberculosis (TB), and told learners that he wrote the poem knowing that he did not have long to live. She would then ask learners to compare this with their feelings regarding their bucket list and what they would like to achieve in the future.

Participant 4: When asked to provide an example of a language lesson, participant 4 used an example of a Grade 8 lesson – she would start the lesson by reviewing what they know about parts of speech, for example. She would then display a PowerPoint slide with examples of different sentences, and have learners identify certain parts of speech in the sentences (in context), rather than simply providing them with single words. She would then delve deeper and provide a passage which learners would have to read and then find parts of speech in various sentences – if learners got an

answer wrong, she would explain why it was wrong and assist them in correcting it. She would allow learners to work in groups to identify parts of speech – she said that language lessons can be boring but that educators can include exercises and collaboration to engage learners.

When she relayed what a literature lesson might look like, she used the example of novel study – she stated that she would provide them with a history lesson regarding the literature and utilise a PowerPoint presentation, and sometimes YouTube videos, to provide learners with more context. This was done so that learners could understand the author's background and the context of the story. She stated that the use of videos helped learners form pictures in their minds, and that she would then start with an introduction which involved reading the novel. The participant stated that she preferred reading to learners when starting the novel as she believed that the introduction is extremely important. Later, she would allow learners to read, after she had demonstrated how to read the novel with correct pronunciation and expression. She would then analyse what they had read and discuss how it fitted within the context that they had discussed. She also stated that she would have PowerPoint slides to accompany literacy lessons, with images showing learners things that might be unfamiliar.

Participant 5: She provided an example of a literature lesson first – a Grade 8 lesson that involved teaching short stories. She said that she started the lesson by introducing learners to short stories as a genre and then looked at how short stories are different from novels. She said that they looked at the differences in the way that they were written, and then moved on to read a short story; she then provided some background on the writer and spoke about the setting, which she believed to be a pivotal aspect. When they read the short story together, she would stop at various places, have a discussion with the learners, and unpack various ideas. She then asked them to form small groups in which they discussed certain ideas and gave them some questions to do for homework.

The participant then went over a language lesson, describing one she had given on advertising – introducing it and discussing its prominence. She then introduced a number of concepts in advertising and discussed a PowerPoint presentation with learners that included visuals of advertisements. She proceeded to unpack these

advertisements by analysing things like the colours and fonts, the intention of the advertisements, as well as the target audience. She then proceeded to ask learners whether they felt that the advertisement was effective or not and then, as a group, they had to find an advertisement that they felt was effective. They therefore formed groups and used their own devices to look for advertisements, and some learners chose video advertisements. She used the next lesson to allow learners to talk about the advertisement they had chosen and tell the class why they felt that it was effective.

4.3.3 Interpretation of findings from the semi-structured interviews

The data collected from the semi-structured interviews were critically analysed and coded. Following the critical analysis and coding, a number of main themes were identified. The main themes identified in the data were transformational positionality, attitudinal positionality, technological positionality, and restrictive/limiting factors. These are represented in table 4.2.

Table 4.2: Themes, subthemes and categories in the primary data

Themes	Subthemes	Categories
Transformational positionality	Transformed practice	Change
	Behaviour	Educator behaviour Learner behaviour
Attitudinal positionality	Attitudes	Educator attitude Learner attitude
		Technological positionality
Technological positionality	Technological views	Societal views Educator views Learner views
	Educational preference	Instructional preferences (educator) Learning preferences (learners)
Restrictive/limiting factors	Barriers	Societal Mental
	Boundaries	Educators Learners

As presented in the above table, I first identified categories, then grouped them together into broad themes (sub-themes) and then identified the four main themes, which I labelled in my own words. Furthermore, the various categories were linked to various areas of focus, namely, dialogic engagement, lexicography, educators' incidental use of translanguaging, the embracement of multiliteracies, discursive activities, communicative awareness and technological prowess.

Dialogic engagement

Participants 4 and 5 spoke about incorporating a great deal of class discussion into their lessons, which contributed to an environment that embraces social constructivism, as it encourages learners to share ideas and build upon one another's' ideas. The encouragement of class discussion on the part of the educators (educator behaviour) made a difference to learners' behaviour, as learners were clearly passionate and engaged with the ideas that came up in the class discussions. The participants displayed a positive attitude towards technology, as did the learners, showing that both the participants and the learners had positive and optimistic technological views. It was also clear that with regard to educational preference, all the participants displayed a preference for incorporating technology into their instructional practices, and learners participated with greater interest when technology was incorporated into the lesson, showing that learners display a learning preference for lessons that incorporate technology. For example, participant 1 stated that the learners become excited when you allow them to utilise their devices, and participant 2 stated that learners feel empowered and confident when using technology. This is further evidence that the learners display a positive attitude towards using technology in lessons and that their learning preference involves the use of technology.

It was also evident that technology provides a platform on which learners can build onto one another's ideas (learner behaviour), with the guidance and assistance of educators. For example, the use of technology allows for a learner-centred approach to education – technology such as YouTube videos like TED talks can be used as a foundation on which to base a discussion and this will, in turn, lead to learners sharing their ideas with one another and building on what they know. Participants stated that they make use of technologies such as Microsoft Teams – such online platforms allow for learner and educator collaboration (educator and learner behaviour), for example, sharing ideas in online discussions and adding notes to a discussion that is recorded. The utilisation of technologies such as Google Documents, for example, may also provide learners with a platform for collaboration, as learners can participate in group projects on a shared Google Document.

Social constructivism was also evident among the participants, because it was clear that they learnt more about certain technologies from one another, for example the

educational session that was conducted on how to utilise virtual reality (VR) goggles effectively to make lessons more relatable to learners, and the idea of the offline dictionary app that was shared by participant 4, and consequently adopted by participant 5.

Participant 2 stated that Covid-19 had forced her to adapt to using technology to a greater extent in the classroom (altering her technological view), and that the use of technologies that arose in an attempt to overcome the societal barriers caused by Covid-19 resulted in the use of platforms like Microsoft Teams, where there was a great deal of online collaboration between educators and learners, and among the learners themselves. Participant 2, specifically, demonstrated transformed practice in her class discussion about the play, *The Tempest*. In her discussion she related the generalised concept of colonialism to a specific context (South Africa), which resulted in learners transferring their understanding of the context of the play in which it was originally written to relate it their individual contexts as learners living in South Africa (resulting in a change to the relevance of the play for learners).

Lexicography

South Africa has eleven official languages and multilingualism therefore plays a critical role in the South African education system, as it allows learners to utilise their home language in their learning experience (Jordaan, 2017). Although multilingualism was not an aspect that was necessarily or explicitly brought up in the study, a few points that arose from the discussion could be related to multilingualism. Participant 4 spoke about implementing the use of “The Offline Advanced English Dictionary” during lessons, indicating a change in the educator’s views about the use of paper-based resources and displaying a positive attitude towards technology. This app not only acts as a dictionary, but also has various features such as crosswords, words of the day and a “speak and translate” function. The “speak and translate” function addresses the concept of multilingualism by overcoming language barriers that learners may face. Bearing in mind that South Africa has eleven official languages, learners do not necessarily have English as their mother tongue. This app therefore serves to possibly overcome the societal and mental barriers learners may face when having to communicate in English as opposed to their home language. In addition, the fact that

learners are able to speak into the app and have the app translate words for them may assist them in overcoming the language barrier.

Incidental use of translanguaging

Translanguaging encompasses the use of a multiplicity of languages when teaching (Balfour & Mkhize, 2017:134). Translanguaging, like multilingualism, was not a concept that was explicitly discussed in this study, but aspects brought up during the interviews may be linked to it. Translanguaging and multilingualism also intersected in this study: participant 4 implemented “The Offline Advanced English Dictionary” in her classroom (indicating a positive attitude towards technology integration). The “speak and translate” function of this app addresses translanguaging whilst also addressing multilingualism, as it allows for learners to utilise their home language in the learning environment to better understand English terminology, which assists learners in overcoming language barriers. This addresses a core issue of translanguaging, namely, the provision of an educational environment that embraces multilingualism, and in which every learner’s home language is regarded as an asset (Cenoz & Gorter, 2020:300). This, in turn, enhances multiliteracy in the classroom, resulting in a change in pedagogical practice. Participant 5 also discussed using this app in her classroom; this gave learners an opportunity to overcome language barriers and value their home language, as well as to view their home language as an asset.

Multiliteracy embracement

The core focus of this study is encompassed within the framework of multiliteracies. A multiliterate classroom values the unique abilities of every learner and aims to create an inclusive and accommodating learning environment that is conducive to transformed practice. With regard to multiliteracies, participants exhibited a moderate understanding of what the concept means. There was, however, some confusion as to specificities surrounding the term, which represents a mental barrier. All of the participants understood that multiliteracies involve the incorporation of various teaching and learning methods as well as the incorporation of technology, but none of them brought up the four pillars of multiliteracies and did not identify all of the kinds of learning styles in the classroom. A definition deficit (for the term ‘multiliteracies’) was therefore evident.

Further, educators utilised strategies that focused on incorporating technology into lessons and displayed an overall optimistic attitude to creating a multiliterate classroom environment. In addition to using technology to enhance lessons, participants 4 and 5 also mentioned changes that they implemented in their physical learning environments. For example, they mentioned a variation in their seating plan to suit differentiated methods of learning and to enable group work. In addition, they varied the seating types available, for example providing learners with a gym ball to sit on as opposed to a traditional chair (this assists some learners with concentration in the classroom and addresses learner preferences).

Participants 1, 2, 4 and 5 displayed positive attitudes towards the utilisation of mobile apps to enhance multiliteracies in the classroom, while participant 3 had a neutral attitude on the matter, because she said that its effectiveness depended on how it is used in the classroom. All the participants showed ingenuity and creativity in their behaviour whilst utilising mobile apps, for example, participants 4 and 5 adapted to using an online dictionary app, as opposed to making learners use physical dictionaries (positive technological views). The benefits of using this app were discussed, such as additional content that could be generated which could not be done with the use of a physical dictionary – learners therefore experienced a change in the content they could access when using an online dictionary app, as opposed to a physical dictionary. The theme of transformed practice was also evident in the use of technologies and, in turn, the various teaching and learning methods, which led to a change in learner behaviour, as learners showed more interest and sometimes performed better academically when assessed online. Learners displayed a particular learning preference as they clearly showed greater interest when allowed to use technological devices in the classroom. Participant 2 noted that when learners were allowed to use technology, they felt empowered and confident. Participant 1 noted that they became excited when they used technology (learner behaviour), and all participants noted that learners were more eager to learn when technology was involved, thus showing a positive attitude towards this form of learning. All participants felt that mobile apps allowed them to apply more teaching styles in the classroom (technological views), for example, participant 4 noted that it made provision for audio-visual learners and participant 5 noted that it changed (transformed practice) the learning environment and enabled learning to move from being ‘parrot fashioned’, that

is, the use of instructional teaching methods, to a learning environment that catered for multiple skills and allowed for discussion among the learners in class, and for learners to share multiple perspectives.

Discursive activities

Cooperative-based learning encourages learning through the use of group work (where participants in the group share a common goal) and applies techniques to facilitate education through group work (Barkley et al., cited in Clapper, 2015:151). Cooperative learning allows learners to take part in collaborative learning, where learners work in small groups to complement one another's construction of knowledge and understanding of the content (Slavin, 2014:3). Participants 4 and 5 made conscious and purposeful use of cooperative learning (educator behaviour) when they encouraged learners to work in small groups (optimistic attitudes regarding group work). They stated that they also make use of multiple seating plans (instructional preference), which is conducive to group work, and therefore, cooperative learning. Participant 5 stated that she consistently incorporates discussions (class and group discussions) in order for learners to build on one another's ideas and contribute to each other's knowledge banks. She also stated that learners became very involved in discussions and were passionate about sharing their ideas with others – this can be related to learners' attitudes and behaviours, in the sense that learners displayed enthusiasm and were passionate about their ideas during discussions and the fact that they were extremely engaged (behaviour). Participant 5 also noted that she encouraged a great deal of class discussion, linking to educational preference, and it was clear that learners enjoyed participating in class discussions too (learning preference).

Communicative awareness

The ultimate goal of English educational instruction (pedagogy) is for learners to achieve communicative competence when using the English language. Participants 1 and 4 mentioned that when they conducted a literature lesson, they would firstly read to the learners in order to model the manner in which they were expected to read (instructional preference). This educator behaviour not only assisted learners in being able to change the way they read and to read the text fluently, with the correct pronunciation, but also allowed learners to gain the context in which the text was set

and the accompanying nuances in the text. In other words, in reading the texts to the learners, the participants could also convey the tone, pitch, pauses and emotion in the way the text should be read. Conveying these aspects to learners is significant for communicative competence, as it allows learners to become aware of how they should be reading the text in order to convey its meaning and the context within which it is set. It also allows learners to overcome boundaries in literacy that may prevent learners from attaining communicative competence. Participants 4 and 5 also utilised the online dictionary app, which enhanced communicative competence, as it not only provided an online platform for learners to engage with, but also tools for improving such competence. This entails allowing learners to focus on, for example, a word of the day and the contexts in which those words can be used, as well as involving learners in interactive games.

Technological prowess

This study focused on the use of theoretical frameworks that allow for the advancement of pedagogical principles when utilising technology in the classroom, as well as on the framework of technological pedagogical content knowledge (TPACK) (Mishra & Koehler, 2006). In the study it became apparent that educators had started to incorporate technologies from a moderate extent (two out of five participants) to a greater extent (three out of five participants) in their classrooms and displayed an overall positive attitude to the utilisation of technology both in teaching instruction and learners' methods of working (educational and learning preferences). Participant 3 stated that in her view technology is only effective when used in a certain way. She was also not completely sure about what was meant by mobile apps, and this indicated the presence of a mental barrier, as it displayed a lack of technological prowess. This barrier became further evident when the participants stated that they felt that they required training in the use of technology: participant 2 stated that step-by-step training on a regular basis would be useful, participant 3 requested regular updates on new technologies available, and participant 4 required training on how to use technologies such as Chat GPT and plagiarism apps.

Boundaries for learners included the fact that learners have to make use of technology within a restricted context, where clear boundaries are set. For example, learners need to be monitored when using devices and they need to be given time limits. The

utilisation of technology can also be linked to learning preferences, as learners clearly preferred lessons that involved the use of technology and showed a willingness and eagerness to embrace technology in their learning experience. The participants in the study also showed a willingness to embrace technology in their teaching, and none of them were against the use of technology in the classroom. It would appear that the use of technology led to a change in learning as a whole (transformed practice), as there was a change evident in learner behaviour (learners were more excited and eager to participate in lessons when using technology or apps) and learners displayed greater interest. Three out of the five participants noted an improvement in assessment results when they utilised technology to conduct assessments.

Participant 2 stated that her teaching practice had changed dramatically over the years as a result of the incorporation of technologies: when she began teaching, her use of technology involved overhead projectors and transparencies that she would make notes on. Subsequently, over the years and as a result of Covid-19, she had been forced to utilise technology to a much greater extent, for example, lessons had to be conducted online via Microsoft Teams and had to be recorded so that learners could access the lessons from home. Work also had to be uploaded on online platforms such as Microsoft Teams, as work could not be completed in the traditional classroom setting. This displayed a significant change in her teaching practice and led to transformed practice on her part, as she applied all of her educational experience and knowledge to a new context.

How the themes link to the four pillars of multiliteracies

In analysing the data from the study that was conducted, I mapped them onto the four pillars of multiliteracies. I therefore mapped the data according to the pillars of overt instruction, situated practice, critical framing and transformed practice:

Overt instruction

According to Ganapathy (2014:413), overt instruction is made up of methodical, analytic and mindful understanding. It focuses on constructivism and utilising prior knowledge as a foundation on which to build, while participating in experiential learning and creating meaning (Engelbrecht & Genis, 2019:7). Social constructivism and cooperative learning are therefore critical theories in this regard (Engelbrecht & Genis,

2019:7). Participants 4 and 5 mentioned that they made use of class discussions during their lessons, which allowed for the construction of knowledge among learners and facilitated by the educators. Such discussions were encouraged and embraced by both educators (educator behaviour and educational preference) and learners, and the latter were also very enthusiastic about sharing their unique ideas with the rest of the class (learner behaviour and learning preference). An overall positive and optimistic attitude was displayed by both learners and educators when it came to class discussions. This also links to educational and learning preference, as class discussion was clearly viewed in a favourable light when engaging with the lesson content.

Technological views were positive on the part of both learners and educators, because technology such as YouTube was incorporated into lessons in order to show learners videos that were thought-provoking and would encourage discussion in the class. Overt instruction was also evident when participants 4 and 5 encouraged learners to take part in group work (positive attitude towards group work and intuitive educator behaviour) – group work allowed learners to build on their prior knowledge with what they had learnt while participating. Participant 2 stated that Covid-19 had forced her to build on her technological knowledge, and this led to her participating in experiential learning (when learning how to use Microsoft Teams effectively) in order to be able to teach lessons online and upload work for lessons through online platforms. Experiential learning was also evident when participants participated in the VR training (expanding on their technological views), where they were taught how to utilise VR goggles in the classroom to enhance the teaching of content. Overt instruction was also evident when participant 5 gave a lesson about advertising, where she asked learners to look up different advertisements and examine particular features such as layout, colour and font size and type, for example. This was in order to prepare learners for a group activity, where they had to find an advertisement that they believed was effective and tell the class their reasons for this. Technology and group work was utilised to allow learners to contrast various advertisements and deduce which ones they believed were effective.

Situated practice

Situated practice embraces individuals' experiences and upbringing, forming a link between these aspects and matters under consideration and allowing individuals to form their own link between these matters and their unique backgrounds (Engelbrecht & Genis, 2019:7; Ganapathy, 2014:413). This allows individuals to enlarge their cultural/linguistic frameworks via practices of meaning creation (Engelbrecht & Genis, 2019:7; Ganapathy, 2014:413). Situated practice was evident in multiple aspects of this study. Participants 4 and 5 placed a great deal of emphasis on incorporating group work and class discussions into their lessons. Participant 5, in particular, stated that she tried to incorporate class discussions, which she would initiate, and learners would contribute to the conversation, generating much of the discussion and ideas themselves (optimistic attitude displayed by educator and learners when incorporating class discussions, and initiative displayed by educators and learners). This allowed learners to share their individual opinions and experiences with the class, and the other learners were then able to form a link between the content discussed and their own unique experiences. This was also evident when participant 2 discussed how she went about teaching *The Tempest* to learners, relating the Shakespearean play, which was written during the era reigned over by King James I, to the South African context. Participant 2 was able to do this as she spoke about the experiences of the character, Prospero, and linked his character to that of a coloniser, and furthermore, the idea of colonisation. This allowed learners to delve into the text and relate the play to their own unique contexts, and to the idea of colonisation in South Africa, and the effects that it had on the country and its people. Learners were also able to broaden their cultural frameworks, as they developed a more encompassing idea of colonisation, viewing it on a global scale.

Critical framing

According to Ganapathy (2014:413), critical framing involves an understanding of cultural and social contexts of certain ideologies, taking a step back from these meanings and interpreting them critically with regard to their cultural context and purpose. Critical framing focuses on the power dynamics in society, as well as the hidden ideologies that arise from texts (Engelbrecht & Genis, 2019:8). With regard to power dynamics in society, participant 2 was able to link the Shakespearean play, *The*

Tempest, to this aspect. Learners regularly have to deal with Shakespeare when doing English at school, and one of the challenges faced in this regard is to make it relevant to learners and to get them to identify hidden ideologies and power dynamics that can be related to their own contexts. Participant 2 was able to do this by engaging in a critical discussion with learners, where she started off by talking about the character, Prospero. She related Prospero to a coloniser, and went on to relate the play to colonisation, and specifically, colonisation in South Africa. In doing so, learners could identify the power dynamics evident in the play and could relate the play to the South African context, which is relevant to them. This showed creativity and critical thinking on the educator's part (educator behaviour). Participants 4 and 5 both incorporated group work and discussion into their lessons, which enabled their learners to understand the ideas and perspectives of others within their respective contexts, and then apply the understanding and ideas obtained by listening to the ideas of others to their own cultural contexts. Participant 4 went over a lesson that she did about advertising. This involved learners working in groups and conducting their own research about which adverts were effective and which were not. Learners then had to find an advertisement that they believed was effective and present it to the class. This showed that this participant, in asking learners to analyse and compare the advertisements, used initiative and embraced technology (technological views) to (in their given contexts) critically seek out possible hidden ideologies and power dynamics in these advertisements, and in turn, relate those ideas to an advertisement they deemed to be effective within their own contexts.

Transformed practice

Transformed practice places focus on the re-creation of meaning by translating ideas from a generalised context to an individual's unique context (Engelbrecht & Genis, 2019:8). Individuals are required to use their ingenuity and creativity to formulate new meaning and reinvent their ideas (Engelbrecht & Genis, 2019:8). When the participants spoke about their use of technologies, teaching methods and the lessons they conduct, transformed practice was not explicitly evident. One example of transformed practice that I could identify from the study was when participant 2 spoke about how she would go about a language lesson. She spoke about looking at summaries with learners and stated that she would progress from a simple level to a more complex level. She mentioned that she utilised technology to demonstrate to

learners how they could take a traditional summary and transform it into a new format such as an email or a speech. Transformed practice is involved here because the learners were not simply paraphrasing a text to create a summary but were creating a new kind of text. Another example of an activity that embodied transformed practice to some extent was when participant 3 conducted a literature lesson with learners which dealt with a poem on the theme of death. She asked learners to relate the idea of death to their own lives and how they perceived death. She then asked the learners to create a bucket list of all the things they wanted to do if they knew that they did not have long to live and to think about what they wanted their lives to look like in the future. This activity was done prior to teaching the actual poem.

The technologies and teaching pedagogies used by many of the participants manifested overt instruction, situated practice and critical framing, but they did not manage to reach the point of transformed practice.

4.3.4 Findings from the secondary data

The secondary data were critically analysed and coded. This was followed by the identification of the various main themes. The main themes identified from data set 2 include transformational positionality, attitudinal positionality, technological positionality, and restrictive/limiting factors. These are presented in table 4.3.

Table 4.3: Themes, subthemes and categories in the secondary data

Themes	Subthemes	Categories
Transformational positionality	Transformed practice	Change
	Behaviour	Educator behaviour Learner behaviour
Attitudinal positionality	Attitudes	Educator attitude
		Learner attitude
Technological positionality	Technological views	Societal views
		Educator views
		Learner views
Restrictive/limiting factors	Barriers	Societal
		Mental

As shown in table 4.3, after identifying the categories from data set 2, I grouped them into sub-themes. I then identified the four main themes, which were the same themes that were identified from data set 1. The various categories were then related to multiple focus areas, namely, intuitive language variation, empathy-driven change of

attitudes and practice, the effect of innovative mobile app embracement on attitudes, how policies and attitudes confine multiliteracies, ingenuity through collaboration, subject exclusion, and limited technological ambition.

Intuitive language variation

In the secondary data set it was noted that participant C spoke about translanguaging in the interview and viewed it as being a part of the multiliteracies framework. This participant aimed to use translanguaging in the sense of translating content directly. This was found to be a traditional belief about translanguaging, in the sense that many individuals view it as simply translating one language to another (educator views) when this is not the case. The theme of barriers therefore links to translanguaging because the traditional beliefs surrounding translanguaging prevent the enhancement of multiliteracies in the classroom, because if one believes that translanguaging is simply translation, then its use in the classroom is ineffective, which presents a further barrier to learning.

Participant C proposed an intuitive means of utilising translanguaging (educator behaviour) – this proposition involved the use of English apps that incorporate specific accents, assisting learners whose mother tongue is not English, and allowing them to hear English spoken in an accent that they may be familiar with. Here, participant C's behaviour in the realm of education displayed creativity and ingenuity. This participant also noted that another educator made use of translanguaging in a creative manner when they linked the idea of “leenwoorde” to various languages. This enabled learners to realise that they possessed the ability to understand multiple words from each of the languages, changing learners' views on their academic ability. The educator's behaviour, therefore, reflected respect for all learners and the willingness to make the learning environment as inclusive as possible.

Empathy-driven change of attitudes and practice

The participants in the study were able to work together to explore various challenges as well as successes in their use of mobile apps, and they were able to collaborate and build on each other's ideas when it came to the utilisation of mobile apps in the classroom. The participants appeared to relate to and sympathise with one another's' experiences and ideas about mobile apps, and all the participants were able to gain

new ideas and views from fellow participants in the study. It was also evident that the participants displayed an attitude that was fairly simplistic when it comes to mobile apps. However, this attitude did eventually change, resulting in the development of new ideas such as the idea of creating new apps (transformed practice) – this represented a change in educator behaviour when utilising technology.

Participant D's attitude towards the use of mobile apps changed the initial attitudes of two of the other participants, participants A and B. The latter two participants said that they found it challenging to locate apps that they could use for their respective subjects in order to augment their teaching pedagogies in those subjects, and therefore displayed an initial negative attitude towards app utilisation. Participant D, on the other hand, displayed a positive attitude when faced with challenges in the use of mobile apps for her respective subject, African languages. When she could not find an app suitable for her subject, she decided to create a new app, utilising unique content. This enabled participants A and B to realise that there were ways of overcoming the challenges faced when using mobile apps and that the limitations that they thought existed could be overcome, transforming their attitudes into more positive ones.

The effect of innovative mobile app embracement on attitudes

In the secondary data set, the concepts of translanguaging and multilingualism intersected. In this study, participants were made aware of the fact that learners will not perceive their learning environment as inclusive if their home languages are not valued/incorporated into lessons. It was found that incorporating multilingualism may present itself as a barrier, when participant D, who teaches African languages, was not able to find mobile apps to enhance the content of her subject. She was, however, able to overcome this barrier and displayed an optimistic attitude, as she was able to create her own app. This enabled participants A and B to realise that they too, could create their own apps for their respective subjects. This changed their views on technology, leading to them developing positive attitudes towards the utilisation of mobile apps.

How policies and attitudes confine multiliteracies

Multiliteracies formed the core focus when reviewing the data. The utilisation of various technologies such as mobile apps plays an integral role in the formation of a

multiliterate educational environment. A major barrier that became apparent (and which could be categorised as both a societal and a mental barrier) was the policies that schools implement which do not allow for the use of most technologies (by learners). Some of the participants stated that when they suggested the use of technologies in the classroom, management informed them that this was not conducive to discipline and safety, and that it went against school policy. Another policy was also discussed, namely, the language policy, in terms of which learners must be allowed to use their home language/mother tongue in class. This was viewed as a positive policy as it contributes to an inclusive and respectful learning environment, where learners' home languages are viewed as assets, which is a core aspect of multiliteracies. Another barrier identified was that some schools do not have access to many technological resources as a result of budget constraints and a lack of access to such resources. However, participant D brought up the fact that apps like *Kahoot* can be used, even with no access to the internet. A societal and mental barrier identified was the fact that many educators and management have a negative attitude towards technology utilisation in the classroom. One therefore has to think about how such attitudes can be transformed into positive ones, as negative attitudes and technological views, and barriers on a societal and mental level, inhibit transformed practice.

Another issue that was identified by participant C involved the effective use of translanguaging in the classroom – in other words, how to use it in an effective manner. Educator behaviour and the manner in which they utilise technology in their respective teaching pedagogies may therefore lead to negative attitudes regarding technological views, as educators may develop such attitudes if they are not aware of how to utilise apps effectively. Participant D, however, illustrated that one can take the initiative and create new apps for one's subject if necessary, demonstrating a positive attitude towards possible barriers. Another educator also displayed initiative by incorporating four languages into a lesson, relating each language to “leenwoorde” – this change in conventional teaching methods led to transformed practice.

Ingenuity through collaboration

Cooperative learning was evident as there was continuous interaction among the participants and they were able to share their ideas/experiences with one another.

Participants A and B had developed less enthusiastic and somewhat dismissive attitudes regarding mobile apps, because they were unable to find any apps that could be used for their respective subjects. Their attitudes changed, however, when they realised that participant D had faced the same obstacle but had overcome it by showing initiative (behaviour) and having a positive attitude, going on to create her own app (transformed practice). This altered their attitudes because they then realised that they could also overcome the barriers they thought were in place.

The participants also found that they shared experiences of similar challenges and negative attitudes when attempting to use mobile apps (technological views). During the discussion, however, they formulated ways of overcoming barriers/obstacles, such as using apps like *Kahoot* that are easier to customise to suit their respective subjects, leading to more optimistic attitudes. The participants also realised that mobile apps should not be used to simply add technology to education, but rather to enhance teaching pedagogies (transformed practice).

Subject exclusion

The participants identified a common obstacle regarding communicative competence, as they could not find mobile apps for languages such as Afrikaans and African languages, and this formed a barrier that could have a negative impact on communicative competence in the classroom. Participant D, however, overcame this challenge (barrier) by creating a new app to accommodate her subject (displaying initiative), and this idea enabled participants to realise that such barriers can be overcome, changing their views on such technology.

Limited technological ambition

Participants A and B stated that their main use of apps was for social media, and that they mostly utilised technological tools such as PowerPoint when teaching. This formed part of a trend that I identified, where participants appeared to limit themselves when it came to the variety of apps available (educator behaviour). In addition, participants appeared to limit themselves when considering how to utilise apps in education. They therefore displayed limited ambition when utilising technology and limited technological views. There was, however, a notable change in their attitudes towards technology over the course of the study, because participants A and B went

on to say that owing to the study and what they had learnt, they subsequently researched various apps before downloading them to ensure that they would be useful in their respective subjects.

As stated previously, participant D managed to create a unique app for the subject of African languages, and this then influenced the technological views and attitude of participants A and B, as it allowed them to consider the various possibilities of apps and the fact that apps can be used to suit the needs of your subject. There was therefore a notable change in the attitudes and technological views of these participants, as they were influenced by the behaviours of the other participants.

How the themes link to the four pillars of multiliteracies

The themes identified in the secondary data set may be linked to overt instruction, situated practice, critical framing and transformed practice in the following ways:

Overt instruction

During the course of the interview, the participants shared information with one another and realised that they were all confronted with similar challenges, for example they found it challenging to find apps applicable to their respective subjects. Participant D, however, addressed this by creating a new app, which encouraged the other participants to do likewise. Another challenge shared by the participants was the school policies in place which prevent learners from utilising personal technological devices in the learning environment – participants agreed that this issue should be addressed. An additional issue was that even though the world is becoming more and more technologically driven, the realm of education is still impacted by negative attitudes towards technologies. As a result, participants found themselves in a world that encourages the use of technology yet were discouraged from having learners utilise technologies such as tablets and cell phones owing to school policies.

Situated practice

Learners displayed a positive attitude when it came to utilising mobile apps, as they responded well when apps were included in lessons and felt that the lesson was more relatable. Participant B stated that she felt adept at the use of traditional teaching methods, as that was the way in which she had been taught – this contributed to

another trend that was identified, namely, that educators are apprehensive about transforming their practice with the use of mobile apps and would rather stick to what they know. Participant D identified the fact that some learners claimed that they did not have access to the data required to access the content she posted. This issue is relevant in the South African context as there is a lack of infrastructure, access to electricity and, in turn, Wi-Fi in many schools. This presents a barrier for educators as they do not have access to the resources that they need to teach effectively. In addition to this barrier, learners appear to lack initiative when it comes to prioritising schoolwork over social interaction on WhatsApp, for example. Another important aspect was identified by participant A, who brought up the fact that learners are hesitant to interact on platforms such as WhatsApp for educational purposes, and that they wait until someone else starts a conversation before participating in it themselves. This showed that learners displayed a negative attitude and that there is a need to make such apps more exciting and more interactive. The displacement of learners' priorities when it comes to education shows a negative attitude on the learners' part. It was also found that the learners' attitudes had an impact on the attitudes of educators. This was apparent when participant A stated that the learners' attitudes affected hers. Thus, learners felt more positive about the educational experience and the use of apps when they felt that they were being presented with an opportunity to connect with their lifestyles by being allowed to show their technological initiative and use their cell phones during the lesson; they related to the use of cell phones to complete a task, and became excited about the lesson. As a result, the educator also felt more optimistic/positive regarding the lesson. This showed that a change in the perceptions, behaviours and attitudes of learners may result in a change in the perceptions, behaviours and attitudes of educators.

Critical framing

The study revealed that there was not enough inclusivity regarding the availability of apps for various languages. For example, participant D was not able to find apps for her respective subject (Sepedi), and therefore went on to develop her own app. It was also evident that certain subjects had more apps at their disposal than others, for example there were many apps available for English but few apps available for African Languages and Dramatic Arts. This study enabled participants to realise this, as they were initially unaware of this fact. This provided an opportunity for the participants to

be aware of the fact that some subjects have an advantage over others when it comes to which apps are available. Participants could therefore move forward with an awareness of this issue and it possibly having a positive impact on diversifying apps.

Transformed practice

Transformed practice could be identified when participant D created her own app for her subject to enhance her teaching pedagogy after she was unable to find an app to effectively contribute to the content being taught. In this instance, she displayed ingenuity, a positive attitude and the ability to overcome a barrier (lack of apps available for her respective subject). All of the participants appeared to have grown from the experience and their perspectives on how to integrate apps into a subject were altered. Despite these altered perspectives, however, this change only occurred to a limited degree and the point of transformed practice was not attained. Although participants were able to share ideas and add to each other's knowledge bases, it also became evident that they felt more comfortable sticking to traditional teaching methods like the use of PowerPoint and seemed to be apprehensive about working with new apps/technologies. It was therefore concluded that the participants did not attain transformation in their use of mobile apps in their respective subjects.

Conclusion

Multiple themes were identified from data set 2; these themes relate to the pillars of multiliteracies. The data revealed that the participants in the study were not able to fully meet the targets in relation to the pillars of multiliteracies and were therefore not able to create a comprehensive multiliterate environment.

4.4 DISCUSSION OF MAIN FINDINGS

In order to perform a thorough examination of the findings, I conducted a cross-analysis of the two data sets, comparing the findings from data set 1 and data set 2.

4.4.1 Cross-analysis of data from this study and secondary data

When comparing the two data sets and looking at the findings from both, multiple similarities and differences were identified. In both data sets, the participants experienced challenges and barriers to their use of technologies. Data set 2 showed that the participants faced challenges such as constraints on their technology

utilisation. These included restrictions enforced by management that prevented learners from using personal technological devices in class because it interfered with classroom management and discipline. The participants in this study (De Jager, 2018) faced challenges in the sense that they had to monitor the learners and place restrictions on their use of technology in order to ensure that they were not using their technologies for personal reasons. This shows a clear correlation between the use of technology and classroom management – educators are not adequately equipped to manage the use of technology in the classroom so as not to disrupt the learning space. Effective teaching and learning strategies that are enhanced by technological resources should not lead to an increase in classroom disruption and the use of personal devices should not be a negative aspect for school management. Ideally, educators should have sufficient technological prowess to embrace TPACK in the classroom so as to make content relevant and interesting for learners, whilst allowing learners to feel that they have a degree of power over their learning experience. Such technological prowess includes an awareness of how to effectively restrict learners' activity on technological devices so that their educational experience is not negatively affected by distraction and/or disruption. This is, however, a challenging issue that cannot be addressed immediately, as learning to maintain efficient classroom management is a process of trial and error.

With reference to data set 2, the participants displayed limited knowledge and exposure to technologies and mobile apps and were not always able to find apps that were applicable to their subject. They did, however, learn more about the mobile apps and technologies available, and the fact that one can create one's own app if one cannot find an app applicable to one's subject. This demonstrates a clear willingness to learn more about mobile apps – once educators feel empowered in their ability to utilise mobile apps, they show initiative and want to incorporate them in their lessons. In this study, the participants all stated that some form of training would be useful when it comes to utilising technologies and mobile apps. They stated that they were not always kept abreast of the apps and technologies available, and that they needed to be trained in how to utilise various technologies and apps. Educators cannot be expected to incorporate technologies such as mobile apps and run a technologically driven classroom when they are not equipped with the training or awareness to do so.

Through the analysis of data set 1, it became clear that the Covid-19 pandemic had forced participants to become more aware of how to use technology in education, as it led to remote learning where learners could not be taught in the classroom setting, and educators could no longer rely on traditional teaching pedagogies to teach content effectively. The pandemic revealed the gaps in the education sector and the lack of technological prowess on the part of educators. This was in part due to limited access to training in the use of technology in education. Mishra and Koehler's (2006) TPACK framework is not being effectively integrated in teaching pedagogies, because educators are not using innovative technology in a way that enhances the TPACK framework. In education, this framework serves as a scaffold which educators can use to integrate pedagogical content and knowledge with the current technologies available (such as mobile apps); however, the framework cannot be effectively implemented in the classroom if educators are not provided with the necessary training to do so. Covid-19 also affected long-service educators, who have developed routines in their teaching methods and are reluctant to move out of their comfort zones. Consequently, the pandemic forced such teachers to engage with technology. Technological integration should not arise as a response to outside events, but should be proactive by routinely incorporating and accepting technology as established teaching practice in the classroom.

In both data sets it was evident that the learners displayed a positive attitude towards the utilisation of technologies and mobile apps in the classroom, and that they displayed a learning preference for learning content with the use of technology. One has to ask why this positivity is not being harnessed effectively and where the negative use of technology stems from. Both data sets showed that there was a change in the participants' attitudes – they came into both studies (De Jager (2018) and the semi-structured interviews) with preconceived ideas about the use of technology and mobile apps and, following the studies, they experienced some kind of change in or realisation about the utilisation of mobile apps and technologies in the classroom. Preconceived ideas about technological use in the classroom and the bias towards technology mould the interaction between educators and technology in the classroom.

One of the main differences between the current study and data set 2 was that the participants who were interviewed in the former study all had access to a wide range

of technologies and tools, with resources that included laptops, overhead projectors, smartboards and VR goggles, and most learners had access to a range of personal devices. This meant that they had a range of technologies at their disposal and could therefore experiment with them in their lessons as they wished. The secondary data set, however, revealed that participants did not necessarily have access to such a wide range of technology and technology was not readily available to the participants. The participants in the latter study also struggled with management's attitude regarding the use of technology in the classroom. They were therefore restricted in how they could make use of technology, as learners were often not allowed to access their personal technological devices in the classroom. One has to question the influence of management's attitude on the staff's attitude towards technology. Consequently, a difference was detected in educator behaviour, attitudes and technological views when looking at both data sets. Another difference noted in this study was that the participants in the current study were all closer to attaining transformed practice in their teaching pedagogies (although transformed practice was not adequately attained with the use of mobile apps/technologies in the teaching of English). It was evident, however, that the participants in both data sets were not able to meet the requirements for addressing the four pillars of multiliteracies effectively through the use of technologies/mobile apps in their respective subjects. Unrestricted access to technology does not necessarily equate to the effective use of technology/mobile apps to enhance education.

4.4.2 Overall findings

When looking at the topic of the study, "The use of mobile apps to enhance multiliteracies in English language education", it may be noted that the participants in this study were able to utilise mobile apps to enhance multiliteracies in English language education but only to a limited extent. The reason why they were not fully able to enhance multiliteracies was because not all of them were fully aware of what mobile apps are, or how they can be utilised to enhance teaching pedagogies effectively. Another reason was that a deficit in the definition of the term "multiliteracies" was evident amongst all participants. While all were able to identify aspects that contribute to a multiliterate classroom environment, none was able to provide a thorough explanation of multiliteracies and relate it to their classroom

practice. Although the participants all displayed a moderate awareness of the technologies available to them and could incorporate technologies in their English lessons to some extent, it could not be concluded whether or not they could effectively utilise mobile apps (specifically) to enhance multiliteracies (in its entirety) and address all four pillars of multiliteracies. Participants were also unable to enhance multiliteracies to a full extent, because they did not attain all four pillars, specifically the pillar of transformed practice. When analysing the interviews conducted with the five participants of the current study, all were able to address three of the four pillars of multiliteracies, namely, overt instruction, situated practice and critical framing, but only two touched on transformed practice. Even so, they did not provide enough evidence to suggest that they had met the requirements for transformed practice to a greater rather than a lesser extent. Although the participants were able to provide examples of teaching practice and classroom management that addressed some of the pillars of multiliteracies, none explicitly mentioned the four pillars of multiliteracies, or what they comprise. It was clear that transformed practice was not as easily/readily attained as the other three pillars, and that a connection between effort, understanding and the availability of suitable technologies is evident.

4.5 CONCLUSION

Chapter 4 dealt with the findings of the study that I conducted, as well as the findings gleaned from the secondary data. The chapter firstly discussed the demographic characteristics of participants and went on to discuss the findings of the semi-structured interviews (data set 1) with the educator participants. An interpretation of the findings from data set 1 was also provided in terms of the themes identified in the data, and these themes were then linked to the four pillars of multiliteracies. The chapter also discussed the findings gleaned from the secondary data (data set 2), and then discussed the main findings using a cross-analysis of the two studies and the overall findings of my study. It was concluded that the participants in this study were not able to address the four pillars of multiliteracies effectively in terms of utilising mobile apps to enhance multiliteracies in English language education.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

In chapter 4, I discussed the findings of my study and those gleaned from the secondary data. I also discussed the coding of my data and the secondary data, which was done to identify significant themes. I subsequently cross-analysed the results of my study against those from the secondary data, and then summarised the overall findings. In this chapter, I provide answers to my research questions posed in the first chapter. I then present the inferences and conclusions of my study. Finally, I discuss how this study contributes to the existing body of knowledge in this field and make recommendations with regard to future research.

In this study, the main research question was: "How does the integration of mobile apps in the English language lesson enhance multiliteracy?" The sub-questions were: "What are teachers' beliefs/perceptions about integrating technology/using mobile apps?" and "What strategies do teachers employ when integrating mobile apps to enhance multiliteracy?"

The focus of this study was on the effects that the integration of mobile apps has on enhancing multiliteracy in English language teaching and learning environments. It therefore aimed to investigate what strategies and beliefs are utilised by teachers in promoting multiliteracy in the classroom through the use of mobile apps, and in turn, how to improve English language education.

In chapter 4, I summarised the main findings of the study. I found that the participants experienced challenges and barriers in their use of technology, such as restrictions enforced by school management and having to ensure that learners did not misuse technology. Participants had limited exposure to mobile apps and displayed a lack of technological prowess. They often found it challenging to move beyond the integration of technology to the enhancement of their pedagogy using technology. Both the educators and their learners displayed positive attitudes towards technology, although preconceived ideas and bias had affected their initial attitudes. Even with unrestricted

technological access, none of the participants was able to meet all four pillars of multiliteracies or attain transformed practice to its full extent.

5.2 PERSONAL REFLECTIONS ON MY ASSUMPTIONS ABOUT THE FINDINGS OF THE STUDY

Before conducting my study on the use of mobile apps to enhance multiliteracies in English language education, I had multiple assumptions about what the findings from my study would reveal. One such assumption was that the educators in my study would not necessarily exhibit a positive attitude towards the use of mobile apps in the classroom, as this would often involve the use of learners' cell phones and personal technological devices. On consulting various literature sources that dealt with the topic of my study, I found that many educators and individuals involved in the management of schools view technological devices in a negative light, as they deem them to be the cause of disruption and discipline issues in the classroom. This outweighs any positive aspects that the use of technological devices may have in regard to learners' learning experience. The research also showed that an effort was being made to increase access to technology in schools in South Africa, but that educators were not necessarily aware of how to utilise various technologies to enhance education. It was clear that educators were mostly able to incorporate technologies into lessons by substituting traditional media (like paper-based textbooks) with electronic versions into their lessons, but they were not necessarily able to move from substitution to enhancement. I therefore assumed that the educators in my study would face difficulties with moving beyond the point of substitution to reach a point where they could actually use technology to enhance teaching pedagogies (even to a minimal extent). On the contrary, however, the study revealed that educators displayed an overall positive attitude towards the use of technological devices, as they realised the importance of adapting teaching pedagogies to keep up with the technologically-driven generation in today's classrooms. This disproved my assumption that educators would display an overall negative attitude to the use of technologies (including learners' personal devices) in the classroom. This also questioned my assumption that educators would not necessarily be able to reach the point of enhancing their teaching pedagogies with the use of technology. Nevertheless, this study was not able to prove that educators could use mobile apps to fully enhance multiliteracies in English

language education, as they were not able to accomplish the aims of all four pillars of the multiliteracies framework.

Another assumption I had was that the extent of the use of mobile apps would be dependent on the age of the participants involved. I assumed that the older participants were, the less likely it would be that they would be able to use mobile apps and technologies to enhance their teaching pedagogies and the learning experience of learners. I believed that the longer educators had been in the profession, the more set in their ways they would be in terms of their teaching pedagogies, and the less likely they would be to show a willingness to adapt their teaching practice. Although older educators did express a lack of knowledge or awareness of mobile apps, they were making an effort to use technology in their lessons, as well as to use technology effectively, without necessarily realising it.

5.2.1 Implications and recommendations for the study

The main research question for the study provided the basis for deriving several implications and recommendations from the findings of the study. The sub-questions provided an additional platform for generating additional findings, leading to the formulation of several other implications and recommendations.

One of the sub-focal points of this study was mobile apps. From the findings of the study, it was apparent that the educators who participated in the semi-structured interviews did not have a comprehensive understanding of what mobile apps are. Although they were fully aware of technology and its integration in the classroom, when asked to discuss mobile apps, it was clear that there was a lack of understanding as to what classifies technology as a mobile app. Educators were, however, able to name several apps that they utilised in the classroom, which revealed that they were actually making use of mobile apps, despite the fact that this may have been unintentional. It was also noted that learners often initiated the use of mobile apps (when given the chance to do so), and their independent research and subsequent use of mobile apps guided the participants in the way in which they utilised mobile apps moving forward. It was also apparent that educators were not able to make a clear distinction between general technology usage and the use of mobile apps, as when they were asked what technologies they used most often and, subsequently,

what mobile apps they utilised most often, educators would often name the same technologies. The reason why the term “mobile apps” (and not just “technologies” or “apps”) was used as part of the main research question was because the study recognised the value and convenience of mobile apps in the realm of Education, as they can be utilised on devices that are more accessible to learners (like tablets and cell phones), as opposed to restricting learners to traditional technologies like laptops, projectors and programs that can only be operated on computers or laptops, for example. There is therefore a fundamental need to increase the awareness of what a mobile app is in the realm of Education, and to ensure that educators have a clear understanding of the term. It is therefore recommended that when teaching university courses to students, and when providing professional learning opportunities for qualified educators in schools, a clear definition, explanation and examples of mobile apps are provided.

The fundamental focal point of the study was multiliteracies, specifically, how to enhance multiliteracies with the utilisation of mobile apps, and how to attain the four pillars of multiliteracies with their use. The findings of the study revealed that like the definition of mobile apps, educators were not fully aware of what the term “multiliteracies” means. In my honours studies I studied multiliteracies critically and thus became fully aware of its necessity in education. As with mobile apps, educators did make reference to multiple aspects relating to multiliteracies, even though this may have been unintentional. Educators did not provide a clear understanding of the definition of multiliteracies in their interviews; however, they provided many examples of how they implement multiliteracies in the classroom environment, and specified strategies that they used that did, indeed, promote multiliteracies in education. For example, educators spoke about using different media when conducting lessons, such as smartboards and videos, but did not explicitly say that they use specific learning media to cater for specific learning needs. Educators also never mentioned the four pillars of multiliteracies, however, aspects of the four pillars of multiliteracies were evident in their lesson sequences, albeit to a limited extent (as seen in the examples of the language and literature lessons they provided). Meeting the requirement to provide learners with an inclusive educational environment involves the conscious incorporation of multiliteracies in the classroom. This can only be achieved if educators and students in the field of Education are made fully aware of what multiliteracies is,

and how one can create a multiliterate classroom environment. This can be addressed by incorporating a course/courses that explicitly teach multiliteracies in undergraduate studies in Education and incorporating the teaching of multiliteracies in professional learning and mandatory training for qualified educators.

The findings of the study also revealed that Covid-19 had a significant effect on educators' technological capabilities, attitudes and beliefs. During the semi-structured interviews, all participants revealed that Covid-19 had affected their teaching practice in some way. Prior to the pandemic, the participants had the same or similar technologies and infrastructure at their disposal, yet these technologies were not used at all or only to a certain extent by participants. Microsoft Teams, for example, became a very useful platform for the participants during the pandemic when schools had to conduct remote learning. Subsequently, the participants learnt, for example, how to conduct and record online lessons, upload learning materials for learners and conduct assessments online. Following the pandemic, educators continued to use Microsoft Teams because it enhanced teaching and learning in and outside the classroom. The pandemic also forced educators and learners to engage with mobile apps like WhatsApp in order for schools to continue communicating with them in remote settings. This makes one realise the impact that Covid-19 had on the Education sector. Even schools that were poorly resourced were either forced to adopt remote learning or learning ceased altogether. The Covid-19 pandemic highlighted the need for ICT and associated infrastructure in schools, as well as the many opportunities that mobile apps present for the Education sector that had not been recognised before. This study revealed that the Education sector must be adaptable and prepared to adopt remote learning at any point, as pandemics can be extremely detrimental to education if schools, educators and learners are not prepared or able to adapt to remote learning.

Attitudes and beliefs surrounding the utilisation of technologies and mobile apps in education were also found to be problematic. The secondary data revealed that the impact of school management's attitude towards technology usage in the classroom was problematic. De Jager's (2018) study (data set 2) took place before the pandemic – this could be the reason for management's attitude towards technology at the time and this may or may not have changed since. The participants in De Jager's (2018) study indicated that although they were willing to incorporate technology in the

classroom and did so enthusiastically, school management displayed an unfavourable attitude towards learners' use of technology in the classroom. In many schools, it was found that it was against school policy for learners to have mobile devices such as cell phones on their person – this prevented the participants from experimenting with mobile apps in the classroom. Although this presented an obstacle for the participants, it should be noted that technology, especially learners' personal devices, has the potential to disrupt the classroom environment if not used effectively. In the future, a valid avenue for investigation could be to research the question: “How can learners' mobile technological devices be utilised with minimal disruption to the classroom environment?”

By contrast, in the semi-structured interviews the participants indicated that they had more freedom regarding learners' use of personal technological devices in the classroom, as they were allowed to use their discretion when it came to their use. Although the participants were given this freedom, they did not necessarily take full advantage of the opportunities it presented. Despite indicating that they all used mobile devices in some way, there was insufficient evidence that mobile apps were used in English language education to enhance multiliteracies in the classroom. It would appear that the use of mobile apps served mainly to supplement traditional teaching pedagogies, as opposed to enhancing them. All of the participants stated that some form of regular training in the use of emerging technologies would be useful. This leads to the realisation that the provision of advanced technologies in schools is not enough – it must be accompanied by specialised and regular training in the schools for in-service teachers and at universities for pre-service teachers. Further research is therefore needed on how the use of technologies can be effectively supported by the provision of training. This supports the premise of the TPACK framework – in order for pedagogical and content knowledge to be integrated with technological knowledge, these aspects have to intersect (which may be facilitated by regular technological training in the Education sector). Ample access to technological resources in education does not equate to the effective usage of such resources and effective utilisation is only possible if educators have sufficient knowledge. The question is, how does one ensure such training is provided in university courses and in schools for professional educators?

5.3 RECOMMENDATIONS FOR STAKEHOLDERS AND POLICYMAKERS

The study revealed that learners' use of technological devices is often discouraged by school management and school policies. This was evident in the secondary data set, where participants reported that school management often exhibited negative attitudes and beliefs with regard to learners' use of their personal devices (particularly mobile devices) in the classroom. In addition, school policies (such as a ban on cell phones in schools) prevented participants from working with mobile apps in their classes. Moreover, because the use of learners' devices, and thus their participation in activities with mobile apps, was restricted, participants found it difficult to explore the full capabilities of these apps.

In the primary data set (data set 1), the semi-structured interviews revealed that learners' use of mobile devices in the classroom could be determined by the participants themselves (within the constraints of school policy). Nevertheless, despite having more freedom to utilise learners' devices, the participants did not necessarily take full advantage of this, while also mentioning that there has to be constraints on learners' use of these devices in the classroom. While I fully agree that boundaries should be set when allowing learners to utilise such devices, I also believe that banning such technologies from the classroom is problematic. Accordingly, principals and school governing bodies should review their policies regarding the extent to which learners are allowed to use their own technological devices in the classroom. Although there have to be rules and regulations in place regarding the use of technology, I do not believe that banning learners from having personal technological devices is the solution. Furthermore, I believe that technological programs and apps should be used to monitor learners' use of technology in the classroom so that their personal devices do not have to be banned from the school premises or the classroom environment. One such app, namely, Hapara, allows students to be on technological devices while simultaneously allowing educators to monitor and control the information that learners are accessing on their devices. In this way, principals and school governing bodies could use technology to their advantage in their schools while also ensuring that learners' online activities are monitored.

Another recommendation for stakeholders and policymakers is to incorporate comprehensive education on mobile apps and multiliteracies. Pre-service teacher

education at universities should include courses that provide a detailed overview of mobile apps, for example, which mobile apps can be used in teaching various subjects, and how mobile apps can be incorporated to enhance teaching pedagogies. Tertiary education should also include a course/courses on multiliteracies, as there is a lack of understanding of what multiliteracies involves. This will empower future educators to create inclusive and relatable classroom environments. In addition, the compulsory training in which professional educators have to participate as part of their lifelong learning should incorporate training on the use of mobile apps and multiliteracies. The use of such apps to enhance multiliteracies in any classroom environment will not be possible unless educators are equipped with the knowledge and skills required to enhance their pedagogical and content knowledge with technological knowledge.

Stakeholders and policymakers also need to ensure that schools are adequately equipped with the infrastructure and ICT necessary to enable the effective delivery of education, which inevitably involves the effective and efficient use of technology. Therefore, the Department of Basic Education should prioritise access to technological resources for both educators and learners. It is a sad fact that many learners do not have adequate data or technology of their own to meet the demands of education in the 21st century. Consequently, educators and learners cannot be expected to keep abreast with education on a global scale if they are not provided with the resources to do so. This does, however, have to be accompanied by effective training in the use of technologies and the effective management of learners' technological usage in the classroom.

5.4 LIMITATIONS OF THE STUDY

Multiple limitations were identified that may have influenced my study in some way. One such limitation is the fact that I worked with a small number of participants; only five participants were interviewed, as the English department at the school where this study was conducted comprised a small group of educators, all of whom happened to be female. The fact that only five participants were involved was therefore not purposeful. I did, however, ensure that I performed a thorough analysis of the data and provided a detailed interpretation of the findings. I believe that my in-depth exploration of the data mitigated the effect of the small number of participants, and

that the number of participants was suitable for a master's study. The limited number of participants does, however, mean that the findings of this study cannot be generalised; rather, valuable insight is provided regarding the utilisation of mobile apps to enhance multiliteracies in English language education.

Another limitation is that I only conducted semi-structured interviews with the participants. These interviews could have been accompanied by classroom observations; however, owing to time restrictions and the fact that this was a master's study, I believed that the data generated from the semi-structured interviews would be sufficient. In addition, I provided a rich description of the data and performed a thorough analysis thereof. I also analysed the secondary data set (data set 2), which allowed me to cross-reference the findings of my study with those gleaned from a secondary data set. This allowed me to engage with the findings from data set 1 to a greater extent and generate more detailed findings on the utilisation of mobile apps to enhance multiliteracies in English language education.

A third limitation is that the use of a case study may have resulted in personal bias, which may have influenced my study in some way. I did, however, make every effort to prevent personal bias from influencing my study by ensuring that I relied solely on the data and the facts generated by means of the semi-structured interviews. Additionally, I tried not to influence the participants' responses to questions and avoided guiding their responses (either intentionally or unintentionally) and I ensured that I provided as accurate a description of the data as possible.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

The findings of this study illustrate that the participants in both data sets were eager and willing to learn more about the mobile apps that are available to them, as well as how to utilise these apps in order to enhance their teaching pedagogies. The focus of my study was not on the type or amount of training that could be provided to students and professional educators with regard to mobile apps, but rather on the utilisation of mobile apps to enhance multiliteracies in the English language classroom. In future, I believe that the type and amount of training necessary for students and professional educators should be investigated. This could be done by applying research questions that are targeted at generating findings in this regard, and critically investigating the

particular aspects that students and educators would like training courses to focus on when it comes to the utilisation of mobile apps. I also believe that future research should investigate the current training that is available on technologies in education and identify the areas in which it can be improved.

In addition, I believe that as opposed to the use of secondary data and semi-structured interviews (as in this study), future research could utilise lesson observations and additional semi-structured or open-ended interviews with school management, for example, school principals. Incorporating lesson observations may allow the researcher to better determine how effectively educators are utilising mobile apps in the classroom and whether this utilisation results in the enhancement of multiliteracies in the classroom. This will also allow the researcher to get an idea of the way learners respond to various teaching pedagogies that incorporate the use of mobile apps. Interviews with individuals in school management positions could also assist the researcher in assessing the actual attitudes and beliefs that principals, for example, have towards learners' utilisation of technological devices in the classroom. In addition, this could assist the researcher to understand the degree to which strategies for learners' technology use are being implemented by school management to allow their learning experience to be enhanced more effectively.

5.6 CONTRIBUTION OF THE STUDY TO THE BODY OF KNOWLEDGE

This study placed particular focus on the use of mobile apps, and not simply technology in general, to enhance multiliteracies in English language education. Previous studies have examined the effects of technology and the potential that technology may have in the teaching environment. This study, on the other hand, recognised the convenience and value of mobile apps for learners, seeking to investigate the use of these to enhance multiliteracies in English language education, as opposed to the use of any particular type of technology. The study also focused on a learner-centred approach, as the focus on mobile apps was aligned with their convenience and availability for learners, as opposed to laptops or computers for example. This study not only valued the manner in which mobile apps could enhance teaching pedagogies for educators, but also how they could enhance learners' learning experience (by creating a more inclusive learning environment).

The conceptual framework that I developed for this study incorporated multiliteracies, communicative competence and inquiry groups into the TPACK framework whilst also applying social constructivism. This study was therefore able to determine how multiliteracies and communicative competence are directly related to the TPACK framework, which in turn allowed for the focus to be placed on the enhancement of teaching pedagogies through the use of mobile apps. By incorporating TPACK into my conceptual framework, I was able to pinpoint technology and how it enhances teaching pedagogies as a focal point of the study. The inclusion of communicative competence and multiliteracies (the main focal point) subsequently allowed for my study to relate the TPACK model to the goal of English education, as well as the creation of an inclusive classroom environment.

The study also contributed to the body of knowledge by showing that a clear gap exists between simply using technology/mobile apps in the classroom and understanding how to enhance multiliteracies in English language education by incorporating mobile apps effectively in the classroom to enhance teaching pedagogy. The TPACK framework (Mishra & Koehler, 2006) indicates that traditional teaching pedagogies cannot simply be replaced with technology; this has to be used effectively if teaching pedagogies are to be enhanced. Moreover, this study has shown that the mere awareness of this fact is not enough. Accordingly, if teaching and learning are to be enhanced it is essential that educators be trained in the effective use of technology. As Voogt and McKenney (2017:70) state, educators have to be empowered to embrace educational practices that effectively incorporate technology if multiliteracy in the classroom is to be enhanced.

This study has shown that there is a need to overcome the issue of simply substituting traditional teaching pedagogies with technology (which is ineffective in enhancing multiliteracies in education). Furthermore, it has shown that students and educators should be provided with opportunities to enhance multiliteracies in teaching and learning by utilising technology (specifically mobile apps) to reach the point of transformed practice. This was further revealed in this study by the fact that providing educators with limitless technological resources does not necessarily equate to reaching transformed practice. According to De Jager (2019), there is a process that educators should follow when sourcing and evaluating apps in order to reach the point

of enhancing English education with their use. Accordingly, educators need to assess the general details of the app, the technical ease of use, their accessibility and interactivity, the quality of the content, how the app can be used within the TPACK framework, and whether the app can be used to create activities that incorporate the higher levels of Bloom's taxonomy (2019). Puentedura (2012, as cited in Aldosemani, 2019:47) proposed the SAMR (Substitution, Augmentation, Modification and Redefinition) model to provide educators "with a framework meant to enhance integration of emerging technologies into their classrooms" (Hilton, 2016, as cited in Aldosemani, 2019:47). The model is an important component in the process of sourcing and evaluating apps, as the goal is to move past Substitution and Augmentation (which substitute/enhance existing learning tools) to the point of Modification, and ultimately, Redefinition (providing new methods of learning that are difficult to attain without technology). Reference should be made to this model in order to ascertain whether technology is simply being added to education and a nice to have, or whether it is effectively enhancing and transforming the learning process (Kirkland, 2014, as cited in Aldosemani, 2019:47). Before incorporating a mobile app into a lesson, the educator should go through the entire process of sourcing and evaluating it. Ideally, the app should have few technical issues, be available both online and offline, be content specific and support the curriculum, allow for as much interaction as possible, be seamlessly incorporated in lessons (to support the TPACK framework), and allow for activities that support the learning outcomes and allow for the creation of new, previously inaccessible tasks (De Jager, 2019; Lefflerd, 2016, as cited in Aldosemani, 2019:47). By going through this process, educators will have more success in utilising mobile apps to enhance multiliteracies in English language education.

The study also highlighted the fact that there is a definition deficit when it comes to the term "multiliteracies", and that educators do not have a thorough understanding of the term. This relates to the struggle that educators face in reaching the point of transformed practice. A thorough understanding of multiliteracies entails an understanding of the four pillars, which includes transformed practice, where learners apply their knowledge and understanding to complex and diverse real-life situations (Cope & Kalantzis, 2015:4). Educators also need to fully understand the three pillars leading up to transformed practice, namely, situated practice, overt instruction and

critical framing, in order to understand how learners can reach the point of transformed practice. This study has also highlighted the connection between multiliteracies and communicative competence. Communicative competence in English language education is linked to the four pillars of multiliteracies, as multiliteracies in this context involves the creation of texts “and putting them to use in communicative action” (Cope & Kalantzis, 2015:4). This study has shown that communicative competence and multiliteracies are not mutually exclusive, as reaching the point of transformed practice involves the three core constructs of communicative competence, namely, communicative functionality, communicative adequacy and sufficiency of ability, judgement and expertise (Light, 1989, as cited in Light & McNaughton, 2014:2). A multiliterate English language classroom environment is therefore not attainable without communicative competence, and vice versa.

5.7 CONCLUSION

This study investigated the utilisation of mobile apps to enhance multiliteracies in English language education. As part of this investigation, the study examined the findings gleaned from the secondary data as well as those from my study (semi-structured interviews conducted with five participants). It was subsequently established that there was a lack of knowledge and awareness of mobile apps and multiliteracies, and as a result, a gap exists between the point of substituting teaching pedagogy with mobile apps and the point of enhancing teaching pedagogy with these apps. Educators remain on the technological side of integration, not quite moving to the educational/pedagogical side. Consequently, they struggle to move from substituting aspects of lessons with mobile apps to redefining lessons. The study therefore revealed that there is a need to address this gap in the form of the provision of university courses on technology (specifically mobile apps) and multiliteracies, as well as regular and effective training for professional educators in the process of sourcing, evaluating and implementing apps in their lessons.

This study also showed that stakeholders and policymakers should prioritise the training of current and future educators in the effective use of technology in order to enhance multiliteracies in all classroom environments. In addition, stakeholders and policymakers should ensure that such training is accompanied by the effective rollout of the ICT and infrastructure necessary to accommodate a 21st century learning

environment that is as inclusive as possible. With the continuous advancements in education, as well as the evolution of AI, it is essential that stakeholders and policymakers make a concerted effort to bridge the gap that is preventing educators from effectively enhancing their teaching pedagogy with technology, because allowing this gap to continue to exist and grow will result in a stagnant and non-progressive education system that will be detrimental to learners. The education sector needs to equip learners to become critical thinkers who can navigate an ever-changing world.

This study has further revealed that mobile apps hold great potential for enhancing multiliteracies in English language education, provided that the gaps are addressed as effectively and realistically as possible. An awareness of the need for technology in the classroom exists, but this is simply not enough. Technology and multiliteracies are not mutually exclusive concepts – technology cannot be effectively incorporated into teaching pedagogy if the four pillars of multiliteracies are not focused on and effectively addressed. Acknowledging this is crucial for the future successful enhancement of teaching pedagogies through the implementation of technology in classrooms. The technological resources at the disposal of educators and schools will be of no value in enhancing multiliteracies in English language education if the gap between integration and enhancement continues to exist. Educators therefore need to be trained to reflect on the methods they use to integrate technology in order to facilitate a multiliterate environment for learners and achieve communicative competence in English language education.

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Annexure A: Letter of introduction and informed consent addressed to the school principal

Dear Sir/Madam

PERMISSION TO PARTICIPATE IN A RESEARCH PROJECT/CONDUCT RESEARCH

Dear Principal

I, Tracey-Leigh Cloete, am enrolled as a Master of Education student in the Department of Humanities Education, at the University of Pretoria. As part of my master's studies, I am conducting research on the following topic: *Integrating mobile apps to enhance multiliteracy in English language education*. I would like to request permission from you to conduct research at your school in 2023.

The focus of this dissertation will be the effects that the integration of mobile apps has on enhancing multiliteracy in English language teaching and learning environments. The purpose of this dissertation is therefore to investigate what strategies and beliefs are utilised by teachers in promoting multiliteracy in the classroom through the use of mobile apps, and in turn, how to improve English language education.

This study involves a qualitative research approach, and I will be utilising a descriptive case study. The study will involve five educators from the school that I am employed at – these educators will be chosen through purposive sampling, as they will all be English Home Language teachers who teach grades 8 through to 12. The research will be focused on the way in which these educators employ mobile apps in the English language classroom to enhance multiliteracy in English language education, educator's beliefs and attitudes surrounding the use of mobile apps in the English language classroom, and the identification of strategies that educators employ while utilising mobile apps to enhance multiliteracy in English language education.

The five English Home Language educators will be requested to participate in semi-structured interviews (of approximately 45 minutes each), where I will ask them a number of questions relating to the aims and objectives of the study. The interviews will be recorded in-person or electronically via Microsoft Teams, so that detailed transcripts can be made from these interviews. The educators, at their own request, will be made aware of what the transcripts/answers they provide consist of, so that they are comfortable with the information utilised for the study. The educators will also be asked to provide one to two lesson plans each (from lessons involving the utilisation of mobile apps/technology), and these lesson plans will be thoroughly analysed – the information I record from these lesson plans will also be made available to educators upon their request. Follow-up interviews may be required to clarify anything that is unclear. All of the interviews with the educators will be scheduled at a time that suits them and will not disrupt their teaching in any way. All of the above records will be safely stored electronically and will be available for your inspection if you wish.

Throughout the study, all details of the educators (and the school) will remain confidential and pseudonyms will be used to protect their identities. I will obtain the participants' informed consent, avoid deceptive practices, and allow participants to withdraw at any stage. Participants must not feel pressured or coerced in any way during the course of the study, and are under no obligation to remain in the study if they do not wish to do so. I will ensure that I obtain permission from you, the school principal, and the educators involved, to conduct the study. Participants will be provided with consent forms which will inform them of all the details of the study, so that they are fully aware of what the study entails.

Your permission to allow me to conduct this study will be greatly appreciated. The findings generated from this study will be extremely beneficial and will generate new information about how to effectively utilise mobile apps in the English language classroom to enhance multiliteracies. This will enable me to contribute valuable, new information to the bodies of research that exist on this topic, and I will be able to derive innovative teaching pedagogies from this study, which will benefit future learners.

Please also take note of the following clauses applicable to the study:

The desktop data usage clause – I grant the University of Pretoria permission to use the data provided for this study, confidentially and anonymously, for further research

purposes, as the data sets are the intellectual property of the University of Pretoria. Further research may include secondary data analysis and using the data for teaching purposes. The confidentiality and privacy application to this study will be binding on future research studies.

Covid-19 clause – Due to Covid-19, and to minimize the spread of infection, the research may be conducted online or through various other media platforms.

No-award clause – Since participation in the study is voluntary, please note participants will not receive any monetary awards or awards of any kind.

Confidentiality clause – In line with the POPI Act; none of the participants' names or personal information will be used in the report of my study. Because confidentiality is important we expect that any information that will be provided is also private and that it would not be discussed with anyone.

Please be assured that I will conform to the ethics and rules as laid out by the University of Pretoria, and of my ethical conduct at all times. If you require further information, please contact me at 072 6411 543, or my supervisor at 083 554 2088.

Yours faithfully

T Cloete (Ms)

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Prof. L.J. De Jager (supervisor)

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+27 83 554 2088 (mobile)

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If you are willing to allow me to participate in the study as outlined above, please kindly sign the declaration attached to this letter, providing your consent:

I, _____(name and surname), hereby grant permission and consent to Tracey-Leigh Cloete to perform the abovementioned research at this school, and to utilise this research to generate findings in her studies.

.....

Signature

.....

Date

Annexure B: Letter of introduction and informed consent sent to the participants

Dear Sir/Madam

PERMISSION TO PARTICIPATE IN A RESEARCH PROJECT/CONDUCT RESEARCH

Dear Educator

I, Tracey-Leigh Cloete, am enrolled as a Master of Education student in the Department of Humanities Education, at the University of Pretoria. As part of my master's study, I am conducting research on the following topic: *Integrating mobile apps to enhance multiliteracy in English language education*. I would like to invite you to participate in my study.

The focus of this dissertation will be the effects that the integration of mobile apps has on enhancing multiliteracy in English language teaching and learning environments. The purpose of this dissertation is therefore to investigate what strategies and beliefs are utilised by teachers in promoting multiliteracy in the classroom through the use of mobile apps, and in turn, how to improve English language education.

This study involves a qualitative research approach, and I will be utilising a descriptive case study. The study will involve five educators from the school that I am employed at – these educators will be chosen through purposive sampling, as they will all be English Home Language teachers who teach grades 8 through to 12. The research will be focused on the way in which you employ mobile apps in the English language classroom to enhance multiliteracy in English language education, your beliefs and attitudes surrounding the use of mobile apps in the English language classroom, and the identification of strategies that you employ while utilising mobile apps to enhance multiliteracy in English language education.

The five English Home Language educators will be requested to participate in semi-structured interviews (of approximately 45 minutes each), where I will ask a number of questions relating to the aims and objectives of the study. The interviews will be recorded in-person or electronically via Microsoft Teams, so that detailed transcripts

can be made from these interviews. At your request, you will be made aware of what the transcripts/answers they provide consist of, so that you are comfortable with the information utilised for the study. You will also be asked to provide one to two lesson plans each (from lessons involving the utilisation of mobile apps/technology), and these lesson plans will be thoroughly analysed – the information I record from these lesson plans will also be made available to you upon your request. Follow-up interviews may be required to clarify anything that is unclear. All of the interviews with you will be scheduled at a time that suits you and will not disrupt your teaching in any way. All of the above records will be safely stored electronically and will be available for your inspection if you wish.

Throughout the study, all details of the educators (and the school) will remain confidential and pseudonyms will be used to protect their identities. I will obtain your informed consent, avoid deceptive practices, and allow you to withdraw at any stage. Participants must not feel pressured or coerced in any way during the course of the study, and are under no obligation to remain in the study if they do not wish to do so. I will ensure that I obtain permission from you, the participant, and the other educators involved, to conduct the study. Participants will be provided with consent forms which will inform them of all the details of the study, so that they are fully aware of what the study entails.

Your participation in this study will be greatly appreciated. The findings generated from this study will be extremely beneficial and will generate new information about how to effectively utilise mobile apps in the English language classroom to enhance multiliteracies. This will enable me to contribute valuable, new information to the bodies of research that exist on this topic, and I will be able to derive innovative teaching pedagogies from this study, which will benefit future learners.

Please also take note of the following clauses applicable to the study:

The desktop data usage clause – I grant the University of Pretoria permission to use the data provided for this study, confidentially and anonymously, for further research purposes, as the data sets are the intellectual property of the University of Pretoria. Further research may include secondary data analysis and using the data

for teaching purposes. The confidentiality and privacy application to this study will be binding on future research studies.

COVID-19 clause – Due to COVID-19, and to minimize the spread of infection, the research may be conducted online or through various other media platforms.

No-award clause – Since participation in the study is voluntary, please note participants will not receive any monetary awards or awards of any kind.

Confidentiality clause – In line with the POPI Act; none of the participants' names or personal information will be used in the report of my study. Because confidentiality is important we expect that any information that will be provided is also private and that it would not be discussed with anyone.

Please be assured that I will conform to the ethics and rules as laid out by the University of Pretoria, and of my ethical conduct at all times. If you require further information, please contact me at 072 6411 543, or my supervisor at 083 554 2088.

Yours faithfully

T Cloete (Ms)

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Prof. L.J. De Jager (supervisor)

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+27 83 554 2088 (mobile)

lizette.dejager@up.ac.za

If you are willing and provide consent to participate in the study as outlined above, please kindly sign the declaration attached to this letter, providing your consent:

I, _____(name and surname), hereby grant permission and consent to participating in the abovementioned study of Tracey-Leigh Cloete.

.....

Signature

.....

Date

Annexure C: Semi-structured questionnaire for participants

EDUCATORS' INTERVIEW PROCEDURE

The purpose of this interview is to find out about the strategies and beliefs that are utilised by teachers in promoting multiliteracy in the classroom through the use of mobile apps, and how these strategies and beliefs play into the enhancement of multiliteracy in the English language classroom.

The following questions will be utilised to guide the interview:

1. How many years teaching experience do you have?
2. How many years have you been teaching English Home Language at a high school level?
3. What is your highest qualification?
4. What is your understanding of the concept of multiliteracy?
5. How often do you use technology in the classroom? (Please choose one: To a minimal extent; to a moderate extent; to a great extent)
6. How often do you use mobile apps in the classroom? (Please choose one: To a minimal extent; to a moderate extent; to a great extent)
7. What are your beliefs/attitudes when it comes to using technology/mobile apps in the classroom?
8. Do you believe that mobile apps can be used to enhance education?
9. Would you be willing to incorporate mobile apps in your classroom more often?
10. What strategies do you currently use to enhance multiliteracy in the classroom?
11. What strategies do you use when using technology in the classroom?
12. What strategies do you use when using mobile apps in the classroom?
13. Have you used any form of technology in conducting assessments?
14. If you have used technology in conducting assessments, have you noticed an improvement in results?

15. Have you noticed a change in learners' behaviours when using technology/mobile apps in the classroom? (Please elaborate).
16. Have you noticed a change in learners' level of interest when using technology/mobile apps in the classroom? (Please elaborate).
17. What technologies do you use most often?
18. Which mobile apps do you use most often?
19. What training would be useful for you regarding the usage of technology/mobile apps?
20. Do you think that mobile apps can allow you to better cater for more learning styles in the classroom? (Please elaborate)
21. Do you think that mobile apps can allow you utilise more teaching styles in the classroom? (Please elaborate)
22. What is your overall attitude about the utilisation of mobile apps to enhance multiliteracy in your classroom? (Please elaborate)

Annexure D: Turnitin report

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