

Exploring teacher initiatives on teaching digital literacy in English

by

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Dedication

I dedicate this research to my late father, Mr Mudahondo Zengeya Cheromweya, my mother, Grace Pauline, my wife Rhoda, and my children Kaith Tadiwa, Kelvin Takudzwa and Mercy Pauline Rwodzi.

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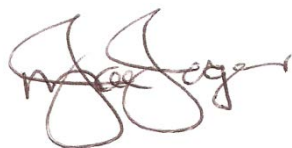
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MJ DE JAGER

19 March 2018

Abstract

Curriculum change and innovation due to technological development has necessitated the inclusion of digital tools and digital literacy in the teaching of English as a second language in the South African curriculum. The need to improve English proficiency and inclusion of digital literacy in language teaching has resulted in teachers having to develop new teaching strategies incorporating digital tools. Economic and income disparities in South African communities and schools account for resource constraints challenging teachers to take initiatives in the teaching and use of digital literacy in English. In literature and education policies, the teaching of digital literacy is recommended, but teachers are not pedagogically capacitated to teach digital literacy in English. To explore the experiences of such teachers, this study explored township secondary school teachers' pedagogical initiatives on the teaching and use of digital literacy in English. An interpretive, qualitative case study was undertaken to explore how teachers use digital literacy in teaching English as a second language in township secondary schools. Data were collected using semi-structured interviews, non-participant lesson observations, field notes and document analysis. Data were analysed using an inductive thematic framework to answer the key research questions. Teachers' voices, actions and documents on the teaching of digital literacy were collected for analysis yielding themes and patterns on teacher initiatives on digital literacy in English. The findings of the study indicate that collaboration, networking, social media communication and other digital literacy practices, including the out-of-school digital literacy practices, are teacher initiatives leading to the utilisation of digital connection platforms for socialisation and teaching and learning. In addition to dividends of connectivism, visual communication and cyber linguistics have become critical for digital-age learners. The creation of English

language learning communities, the development of multiliteracy skills and the contribution to cyber linguistics, are eventual products of learner and teacher participation in the digital landscape. In the light of these findings, I recommend that curriculum reform should incorporate new pedagogical strategies for teaching and use of digital literacy to improve English proficiency by learners. Teacher initiatives are a crucial part of adaptive resilience, as teachers need to adjust to shortages of digital technology resources and connectivity.

Key terms: Digital literacy, English second language teaching and learning, literacy practices, multiliteracies, teacher initiatives, teacher resilience, township schools

List of abbreviations

ACL	Alberta Commission on Learning
ANA	Annual National Assessment
BBC	British Broadcasting Corporation
BICS	Basic Interpersonal Communication Skills
CAPS	Curriculum and Assessment Policy Statement
CALP	Cognitive Academic Language Proficiency
CAT	Computer Applications Technology
DBE	Department of Basic Education
DoE	Department of Education
EASSY	East African Sub-Marine Cable System
ECDL	European Computer Driving Licence
EU	European Union
GDE	Gauteng Department of Education
GDETI	Gauteng Department of Education Tablet Initiative
ICT	Information Communication Technology
IRB	International Review Board
LiEP	Language in Education Policy
MLTF	Media Literacy Task Force
MOOCS	Massive Open Online Courses
NCS	National Curriculum Statement
NSBA	National School Boards Association
OECD	Organisation for Economic Cooperation and Development
OFCOM	Office of Communication
PEEIL	Punjab Education and English Language Initiative
SADoE	South African Department of Education
SGB	School Governing Board
TPD	Teacher Professional Development
UKFC	United Kingdom Film Council
UPS	Uninterruptible Power Supply

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CHAPTER 1: Overview of the study

1.1 Introduction and rationale

This study explores the initiatives taken by teachers in township secondary schools on curriculum innovation necessitated by the deployment of the Information and Communication Technology (ICT) policy in the teaching of English in township secondary schools in the Gauteng province, South Africa. Three issues in South African education are pertinent today. The first is the pressure of technological advancement and innovation (Mafenya 2013), the second is the English language proficiency of teachers and learners (Nel & Muller 2010), and the third is resource-constrained schools in townships (Ebersöhn 2017). This research brings these issues together in one study in exploring teacher initiatives on the teaching of digital literacy in English.

Technological development the world over has commanded curriculum planners and practitioners to incorporate the use of digital tools in high school curriculum implementation (Prensky 2001). The use of digital tools for teaching different subjects and for research is a global phenomenon, and progressive schools are making efforts to improve their digital infrastructure in order to enhance their teaching. The same applies to South Africa. In my opinion, the introduction of computers and the consequent use of digital tools in the teaching of English in particular, resulted in a pedagogical and skills gap for English teachers whose preparation did not incorporate teaching methods involving digital literacy.

The South African education curriculum, which has been characterised by changes and innovations over the past two decades (Adu & Ngibe 2014), has incorporated the use of digital literacy in the teaching of English. According to Adu and Ngibe (2014) the changes affect teachers' pedagogical approaches in the implementation of the curriculum – particularly in cases where inclusion of digital literacy requires digital competence skills. On a global continuum, research into language education and technology has yielded programmes such as Computer-Aided Language Learning (CALL), online learning programmes such as Massive Open Online Courses (MOOCs), e-learning and Technology Integrated Learning (TIL). In the South African context, a knowledge gap exists in strategies of how digital literacy is taught in English to improve English language

proficiency of learners in township secondary schools. While Technology Integrated Learning and e-learning have a lot in common, the terms may also be used for different purposes in different contexts. These technological developments, which also include technology-blended learning, have been used in different parts of the world and have yielded positive results for language teaching effectiveness for proficiency. This study explores the initiatives by teachers on curriculum innovation necessitated by inclusion of digital literacy in the teaching of English in township secondary schools in the Gauteng province, South Africa. According to Hague and Payton (2010) ICT policy deployment affects pedagogical strategies and teachers' epistemology and ontology in the delivery of educational service. In support of the pedagogical strategies, the White paper on e-Education (Department of Basic Education 2004) indicates that the primary aim of ICT policy is to provide access to computers and internet for all learners and teachers by 2025 as part of the strategic plan named 'Towards the realisation of schooling 2025.' The use of ICTs (computers in particular) can no longer be regarded as optional for teaching and learning (DBE 2011).

The major goal in the inclusion of ICT or digital tools in education is to deliver to the public expectations of quality education for economic growth and social development (Department of Education 2004). The goal is to build a domestic knowledge economy, create digital libraries, collaboration, and promotion of professional teacher training institutes. Consequently, inclusion of digital literacy in subjects such as English creates a knowledge economy for the indigenous population and other nations, brings collaboration in teaching, research and promotion of teacher professional development in English language teaching and learning.

In view of the knowledge economy, South Africa has eleven official languages as its linguistic infrastructure, but English is widely used as a language of teaching and learning by the Department of Basic Education (DBE 2011:8). While English is used for teaching and learning, it is taught and used as a second language by many learners with limited proficiency. The proficiency includes the abstract cognitive academic language skills required for thinking and learning (DBE 2011). English is also taught as an independent subject in secondary schools. However, some teachers and education specialist have difficulties in the competent use of English in educational domains. Uys, Van der Walt, Van der Berg and Botha (2007) posit that while it is acceptable that English teachers play a leading role in providing learners with knowledge, skills and understanding for reading,

listening and speaking effectively, Crandall (1998) indicates that this may not be attainable if teachers are incapable of assisting the learners in competent and proficient English. Recent policy (DBE 2011) places a particular emphasis on teachers to become proficient in teaching English as a First Additional Language at primary school level in order to build towards better proficiency in secondary schools. In order to improve English language proficiency, digital literacy was incorporated into the South African English syllabus, and requires sound pedagogical support in order to achieve the outcomes. Mafenya (2013) provides insights into e-learning for first year university students and notes the lack of preparedness by students from rural areas and township environments regarding technological and digital equipment. In order to improve English language proficiency, teachers need pedagogic skills. Hence, this study sought to explore teachers' English digital literacy pedagogic skills in township secondary schools.

Research into how teachers cater for digital literacy in the teaching of English is limited in the context of township secondary schools. Ebersöhn (2017) indicates that township secondary schools are characterised by a very high teacher-learner ratio, poorly-trained teachers, a lack of resource materials such as textbooks and electronic devices, and space for teaching and learning. The lack of space results in the erection of temporary classrooms which do not have electricity or internet connections to allow for possible digital literacy teaching. Mafenya (2013) says that teachers in township secondary schools have limited pedagogic skills and strategies to integrate the teaching of English through the application of new pedagogical approaches involving digital literacy. Historically, township secondary schools were disadvantaged in terms of teaching and learning materials, academic service provision and infrastructure as compared to the former model-C schools (Ebersöhn 2017). The limitation in authenticated pedagogic strategies creates the gap for this study to explore the initiatives taken by English teachers in teaching digital literacy. Digital literacy is not about providing digital tools for learners and teachers, updating software, or connecting learners to various networks, but it is about how knowledge is constructed on a variety of socio-cultural digital literacy practices. More important for this study was the exploration of the teacher initiatives, strategies and approaches that were used to teach digital literacy in English for the purpose of improving learner language proficiency.

Guidelines developed by the e-learning directorate of the Department of Education (2004) indicate that learners should be able to use digital tools integrated in

the teaching of subjects in the curriculum as part of digital literacy. From both the literature and my observations during informal interaction with teachers, it is evident that some grass-roots teachers have difficulty in implementing new policies and guidelines because of various risk factors, while others take initiative and ownership when implementing the new policy, despite the challenges. Currently, some teachers are learning to use digital tools on their own or getting assistance from fellow teachers. More specifically, this study uncovered initiatives that are taken by teachers as they adapt to their pedagogy using digital tools for digital literacy in English. For this reason, I argue that the process of adjusting to new strategies and approaches to teaching digital literacy is part of resilience and therefore needs to be explored.

In this research teacher resilience is understood as an adjustment to varied situations and an improvement of competence in the face of adverse conditions. Windle (2010) defines resilience as the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma. Teachers' adaptation to new methods and paradigms in teaching and adjusting to classrooms with audio visual material is part of resilience. In this exploration, resilience in English teaching needs to be studied in order to make a pragmatic affiliation to digital literacy. The inclusion of teacher resilience in this research is an attempt to understand teachers' initiatives to adapt to new methodologies. Digital literacy in the English intellectual puzzle consists of digital tools, subject content knowledge, adaptation to new learning and teaching material and the pedagogic content knowledge (Blau, Peled & Nusan 2016). It was the inadequacy and lack of authentic pedagogic strategies that prompted me to explore teachers' initiatives as part of their resilience to teach digital literacy in resource-constrained secondary schools.

1.2 Problem statement

Literature on technology in education in South Africa indicates that secondary school (Matric) graduates are unprepared for higher education. Secondary school graduates struggle with academic literacy skills at a higher cognitive level. According to Du Plessis and Gerber (2012) there is a high degree of unpreparedness among many prospective university students regarding English language proficiency and the use of technology for learning different subjects. In support of the above view, Scott and Yeld (2008) state that the lack of proficiency in languages used as medium of instruction negatively implicates

poor teaching methods and an inability to design and create opportunities for learners in English language teaching – particularly where technology is involved. In other cases, “badly trained” or “underqualified” teachers in township secondary schools lack creativity and may present negative attitudes towards change necessitated by technological development (Legotlo, Maaga, Van der Westhuizen, Mosoge, Niewoudt & Steyn 2002). While the use of digital technology and the inclusion of digital literacy in the English language syllabus is largely praised in South Africa and other parts of the world, its teaching strategies are not clearly stated in the English syllabus. According to Rokenes and Krumsvik (2016) digital competence and digital literacy in teacher education requires rethinking. In fact, Krumsvik (2011) argues that approaches, strategies, models and activities to enhance teachers’ and learners’ digital competence and literacies often appear to be poorly integrated into teacher education and that further research is needed. Literature informs us that technology can be used as information repository, data storage, transfer, and creation of content and text used for teaching and learning. The gap exists between the content, technological competence (digital competence) and the pedagogic strategies used to teach digital literacy (Pettersson 2017). Poorly-prepared English teachers in resource-constrained secondary schools were participants in the exploration of their initiatives on teaching digital literacy to improve proficiency in English in preparation for tertiary education and the world of work. On the basis of the claims stated above, I therefore sought to explore how teachers use digital literacy in the teaching of English in township secondary schools.

1.3 Purpose of the study

From the literature it is clear that research on pedagogical strategies for digital literacy is still limited. There is still a need to explore the strategies used by English teachers in resource-constrained secondary schools on how they teach digital literacy in English. Realising this knowledge gap relating to township settings, this study explores the strategies and approaches used by English teachers in resource-constrained township schools on the teaching of digital literacy. In support of the resource-constraint challenge, Erstad and Quale (2009) say that teachers are faced with a frustrating dilemma. By statute or at policy level, teachers are required to use ICT extensively in their practices (DBE 2011), but they are not instructed on how to go about it. Literature informs us that networked computers can be used for communication by both teachers and learners for

learning subjects such as English, and for storage of information for future uses and transfer. This research sought to explore how teachers use innovative ideas on digital literacy in township secondary schools in the teaching and learning of English. More specifically, in this study I attempt to understand the pedagogical initiatives, approaches and strategies that township English teachers use to teach digital literacy in secondary schools. As a result, this study provides insights into the innovations, adaptation and creativity by teachers to integrate technology in English language instruction. I provide insights into pedagogic strategies that grass-root teachers take despite risk factors such as lack of resources, poor training and political interference. In so doing, this research explores the initiatives taken by teachers on the use of digital literacy in English.

1.4 Research questions

Main research question:

How do teachers teach digital literacy in English in township secondary schools?

Secondary questions:

- What digital literacy initiatives do teachers take in teaching English in township secondary schools?
- What are the teachers' experiences in teaching digital literacy in English?
- How do teachers adapt their classroom practice in order to teach digital literacy in English?

1.5 Assumptions of the study

Based on my experiential knowledge and what the literature states regarding Teacher Professional Development theories (TPD), I assumed that teachers have limited competence in digital literacy in the teaching and learning of English at secondary level (Van Niekerk & Blignaut 2014). Krumsvik (2008) states that TPD theories include connectivism, thereby implying the use of social media and the internet for communicating with teachers on professional matters. For example, the cascade model of teacher professional development uses selected teachers to learn new skills and implement these in their respective schools. In support of teacher professional development programmes, Postholm (2012) mentions standardised, school-centred and

self-directed models as part of TPD programmes that can be implemented in schools. With regard to TPD theories, Pettersson (2017) postulates that poor preparation, the need for re-skilling and the need for professional adjustment to new demanding situations require of creative teachers to initiate strategies for the teaching of digital literacy and the integration of technology in their core teaching. Based on the writings of Wanjala (2016) and Wastiau, Blamire, Keamy, Quittre, Van der Gaer and Monseur (2013), poorly-prepared teachers and a lack of electronic writing skills as well as competence in reading and interpretation of electronic texts and visuals, affect progression in digital literacy in the teaching of English. As a lecturer, I have realised that undergraduate students from resource-constrained township schools have poor computer application skills leading to universities' justification for the teaching of End-user Computing as a subject for all first year students. I thus assumed that teachers struggle with digital tools, not only because they have few computers in their classrooms, but also because of crowded classes and limited digital literacy competence skills for language teaching and learning. In addition to the circumstances above, most township English teachers have limited critical skills of teaching digital literacy in English. In this context the teaching of digital literacy is conceptually linked to other classroom practices such as teaching methods, strategies and curriculum aims. Key concepts that emerged from my assumptions are clarified in the section below.

1.6 Concept clarification

The major interacting concepts in this exploration are teacher initiatives, digital literacy, and English curriculum pedagogy in township secondary schools. Teacher initiatives are defined as imagined and created strategies of incorporating digital tools into the pre-active, inter-active and post-active stages of their teaching (Leask & Pachler 2013, Hague & Payton 2010). For the purpose of the study, teacher initiatives are planned tasks and activities designed to meet multiple desired objectives. These can be new inventions or creations, or modifications that support the teaching and learning programme – particularly in adverse situations. Hague and Payton (2010) posit that initiatives are generational steps involving creativity, innovativeness and an ability to demonstrate job ability – especially in adverse conditions. In this context, initiatives include human creations, modifications and curation of existing strategies and skills to suit new settings. These initiatives resemble properties of courage, readiness and being

proactive in changing the learning landscape for the benefit of the learner (Pahomov 2014, Savage & McGoun 2015). Resilient teachers adapt to new curriculum demands by showing courage, readiness and a positive attitude in order to adjust to new settings.

Linked to teacher initiatives in this study is digital literacy that is, new literacies of the 21st century, which differ greatly from the traditional concept of literacy (Janks 2010). Barton (2007) defines digital literacy as the constantly changing technological practices in education and corporate world through which participants and practitioners make traceable meanings using digital technology. Hague and Williamson (2009) posit that digital literacy is the ability to analyse, interpret, understand and use information in multiple formats from a wide range of sources when presented via digital tools. The concept of literacy goes beyond simply being able to read as it has always meant in the past.

In an educational context, digital literacies are nearly always concerned with improving critical thinking relating to subject understanding. As Future Lab puts it in their work, they are concerned with 'research and evidence on developing digital literacy and digital participation in the classroom' and for them 'digital literacy means knowing how technology and media affect the ways in which we go about finding things out, communicating with one another, and gaining knowledge and understanding'. Appropriately designed digital technologies, can enable a more critical understanding of subjects and disciplines than that afforded by information literacy alone (Hague & Williamson 2009:6).

From the above it is clear that digital tools are the technological equipment used to support critical thinking and develop cognitive skills in languages and other subjects (Savage & McGoun 2015). According to Pahomov (2014), learners' active participation in the digital environment improves their digital competence levels, thereby developing solutions to real-life problems. Critical thinking involves the ability to carry out logical, mental constructions clearly and rationally, explore problems, integrate all available information, and arrive at a hypothesis or solution through systematic means (Moodley 2013). In this study the concept of digital tools refers to critical thinking support tools that can be used to make logical relationships and interpret data for possible options to human problems. Digital literacy includes the ability to read, interpret, analyse and write comprehensible textual matter for communication, transfer, storage and retrieval in English learning contexts.

Newlands and Handley (2016) view digital literacy in formal learning contexts as being subject related, but also view it as a learning skill that needs to be taught and supported. In this context, Gilster (1997), one of the first scholars to use the term “digital literacy”, says it can also be viewed as a positive attitude and awareness by teachers and learners to use digital tools appropriately in an effort to access, integrate, evaluate, synthesise and analyse digital information resources as well as co-constructing and extending knowledge boundaries in the educational arena. Gilster (1997) identifies four key competences, namely assembling knowledge, evaluating information, searching, and navigating non-linear routes in order to discover patterns and relationships. Assembling knowledge involves accumulating constitutive data and processing it by intellectual procedures into meaningful and usable units. Evaluation information involves accreditation, authentication and relating to diverse situations and contexts. Subscribing to similar notions, to Lankshear and Knobel (2006) say that searching competence involves the ability to use the internet to identify information sources, and navigating hypertext refers to an ability to use internet tools on websites to access required information. The process also focuses on aggregating information into manageable units. In support of the above views, Gallardo-Echenique, De Olivera, Marque-Molias and Esteve-Mon (2015) say that digital literacy is a convergence of several literacies including elements of ICT literacy, information literacy, media literacy and visual literacy. In the context of township secondary schools, the set of skills and practices involving digital tools create English learning opportunities and access to content knowledge by learners in the digital age. For this study, digital literacy covers an awareness, attitude, and ability of individuals to appropriately use digital tools to identify, manage, access, integrate, create media expressions, communicate with fellow learners, analyse, evaluate, construct new structures of knowledge, and enable constructive social action (Rokenes & Krumsvik 2016).

Digital tools are indispensable teaching tools commanding teachers to shift from traditional methodology to digital methodology because learning now depends on the way and manner in which the content is presented (Savage & McGoun 2015). In addition to the above, teachers develop mechanisms and techniques to apply in the transforming language education landscape. From large to small-scale curriculum innovations, English teachers need to adjust and continue to perform their duties effectively. The role of digital tools is that they provide a platform for teachers to take initiatives, participate on digital

platforms and create English language learning opportunities. Township secondary schools are geographically located in formerly African townships that are historically characterised by limited teaching and learning resources such as prepared teachers and appropriate equipment. In an attempt to address the gap on pedagogical initiatives for digital literacy in English, my study uses a conceptual framework to explore the teaching and use of digital literacy in English.

1.7 Conceptual framework

In the context of this study, conceptual framework is understood as the visual or written product that explains either graphically or in narrative form, the main things to be studied, key factors, concepts or variables and presumed relationships among them. These are the actual ideas and beliefs about a phenomenon (Miles & Huberman 1994). Theories, on the other hand, are formulated to explain, predict, and understand phenomena and, in many cases, to challenge and extend existing knowledge within the limits of critical bounding assumptions (Labaree 2009). The theoretical framework is the structure that can hold or support a theory of a research study. The theoretical framework introduces and describes the theory that explains why the research problem under study exists. A research study may be carried out to test the validity of the theory or provide a guide in the development of a new theory, as is the case in grounded theory (Sinclair 2007). Based on the definitions of the two aspects of research, Sinclair (2007) says the theoretical framework uses previous experiences/tested knowledge while the conceptual framework indicates how the relationship differentials and constructs in the form of concepts can be guided by experience. A conceptual framework was chosen for this research and is the axiom upon which the study is grounded and guides analysis and interpretation of the research data. This research explores teacher initiatives on digital literacy in English. The focus is on teachers' creative ability and adaptive resilience in teaching English in the broad context of digital tools. The teacher initiatives therefore are the primary conception or model of what I planned in the study (tentative theory). The research falls within the broad framework of teacher adaptive resilience. Critical aspects of resilience and an indication of how the theoretical framework was used are briefly discussed.

Gu and Day (2007) discuss teacher resilience as a psychological construct which incorporates the study of personal factors such as self-esteem, self-efficacy, motivation,

resourcefulness and health. These factors assist teachers to be resilient in the face of adversity. Resilience can also be defined as a series of protective factors minimising or reducing the impact of teaching challenges. Teachers negotiate challenges in the normal process of adversity (Richardson, Neiger, Jensen & Kumpfer 1990). Teachers need to learn, unlearn and re-learn teaching skills due to the changing nature of the teaching environment. In South Africa, teacher resilience is a result of the adversity against culture shock due to inclusion of digital technology in the teaching space. Digital technology is fast and convenient for information processing and retrieval (Ebersöhn 2014). As an intervention measure to the above context, Mafenya (2013) says that teachers need to learn about technology before they teach with technology.

The quest to understand teacher initiatives on digital literacy in English was guided by the social cognitive and efficacy theories. In the quest for understanding, theory provides a map (Strauss 1995), or simplification of the world aimed at clarifying and some aspect of how the world works. Theory provides frameworks and has been tested and proved useful. In support of the function of theories, Heinrich (1984) says that it shapes, illuminates what we see, organises collected data and showing relationships among the data. Bandura (1977) outlines four sources of information that individuals employ to judge themselves. These are performance accomplishment, vicarious experiences, verbal persuasion and psychological feedback (emotional arousal). The term, 'performance accomplishments', refers to most important past experiences for self-efficacy. Individuals' negative and positive experiences of previous tasks influence the performance and completion of a given task (Bandura 1977). For this study, teachers' previous experiences with curriculum change issues and acquiring digital literacy skills form part of the accomplishments that provide leverage for teachers' adaptation to the digital literacy campaign.

Vicarious experience is self-efficacy developed on the basis of frequently observed successful performances (Bandura 1971). In the case of teachers, they compare their competence with other teachers at the same level or novice teachers compare themselves with experienced teachers. Self-efficacy is particularly strengthened when the two that are compared have similar skills. This comparison raises self-efficacy levels.

Verbal persuasion encourages workmates, subordinates and members to put more effort into their work (Bandura 1977). Redmond (2010) posits that verbal persuasion is when

self-efficacy is influenced by encouragement and discouragement pertaining to an individual's performance or ability to perform. Encouragement creates better chances for employees to succeed in their goals. Finally, physiological feedback is concerned with emotional arousal – creating and providing people with a platform to express their achievements influences their beliefs and raises their efficacy.

Triadic reciprocal determinism from Bandura's (1977) social cognitive theory emphasizes how cognitive, behavioural, personal and environmental factors interact to determine human motivation and behaviour would influence achievement (Crotters, Hughes & Morine 2008). The social cognitive theory describes human behaviours such as self-observation, self-evaluation, self-reaction and self-efficacy. This theory was used to understand how digital tools are used in the learning and teaching environment to support the teachers' creative ability as an adaptive resilience. This research recognises that learning takes place in a social environment where interaction between learners, teachers and the environment becomes a subject for observation and scientific disposition. Teachers plan lessons, create tasks and prepare teaching aids that match the level and expectations of the learner. The process provides learning opportunities and achievement encourages teachers to improve every time they perform their tasks. In the next section, I review literature about the teaching of digital literacy in English.

1.8 Literature review

In the literature review I focus on what other scholars have written on teachers' involvement in digital literacy and the teaching of the English. The global perspective on digital literacy is reviewed and a brief reflection on the digital literacy experience on the African continent, which includes South Africa, is explored. A reflection on previous research about the teaching of digital literacy is also presented in order to link this study to previous and ongoing projects.

Digital development and technological innovations have changed the communication landscape the world over (Prensky 2001). According to Savage and McGoun (2015) and Pahomov (2014), digital classrooms, digital music, cell phones, smart phones, video games, digital music players, online entertainment, cyber learning and collaboration, Massive Open Online Courses, video cams and all other forms of digital toys characterise the environment of the child in the digital age. In support of the views above,

Whitney (2012) points out that, according to Exploradia of 2011, there were two billion internet users with six billion subscriptions on earth. The rapid rate of technological development dictates that teachers should keep abreast of the innovation by adjusting their pedagogical strategies to meet the digital natives' educational expectations (Leask & Pachler 2013). In Prensky's (2001) view digital natives want to receive information fast, prefer graphics to text and function best in networks. Prensky (2001) uses the term "digital native" to describe the generation born with computers around them. The digital natives are therefore people who prefer the use of technology in solving problems. Ng (2012) says that the current generation could also be called the digital generation or the net-generation. In view of the above terminologies, what are the global and African perspectives on digital literacy?

1.8.1 Global and African perspective on digital literacy

African economies and education curriculum planning are not excluded from the tide of digital literacy in the global communication landscape (Pahomov 2014). On this digital development continuum, smart phones, laptops, iPhones, tablet technology and internet cafés are digital tools and facilities for business, education and social communication. Successful examples of technology integration projects in Europe include the case study of Debenham High School in Suffolk, United Kingdom, which clearly indicates the possibility of connectivism, partnerships, digital collaboration and creativity (Savage & McGoun 2015). Downes (2010) places digital tools at the centre of learning where digital connections become a primary requirement. Furthermore, Downes' influence on connectivism and connective knowledge clearly demonstrates the roles of the teacher in a networked world where learning is personalised, and essential connections made to experts and the world's quality productions (Downes 2010). The European Computer Driving Licence (ECDL) (2014) indicates that promoting digital literacy across the globe in both education and public administration has made a positive impact by linking different social groups on the global network. More examples on digital technology integration include teachers' professional training in Poland, Training Without Boundaries in Romania and Emerald Hill Children's Home in Zimbabwe. In America, the success of Massive Open Online Courses (MOOCS) on the digital landscape cannot be underplayed in a global and regional context.

In support of digital technology in the teaching of English and other language subjects, Ledgard (2011) posits that connectivity has become a reality in Africa and is spreading to all corners of the continent – even to places where electricity is in short supply. In Africa and other developing countries, marginalised communities are turning to rechargeable batteries and solar panels to provide energy for connectivity. As digital devices use electric power, the availability of electricity supports connectivity. Once digital devices are connected network providers easily make connection available. Safaricom in Kenya, Econet and TelOne in Zimbabwe, Mascom and Orange in Botswana, MTN, Vodacom, Telkom and Cell-C in South Africa are some of the parastatals and private network providers in Africa. The availability of the networks guarantees connectivity for online teaching and learning within regions and across borders.

On the same development continuum, the undersea East African Submarine Cable System (EASSY) connects Africa to the internet (Ledgard 2011), which has resulted in drastically reduced costs and improved download speed for both text and graphics. Facebook, Twitter, WhatsApp and other social networks are now very popular for online business communication and money transfers in Africa due to digital connection initiatives. These technological developments need to be incorporated in the teaching and learning framework for the provision of education that connects learners to global trends. In view of the technological developments and innovations, teachers need to undergo methodological transformation and incorporate digital tools in the teaching of English and other languages. In the next section, I review digital literacy experiences in South Africa.

1.8.2 South Africa's digital literacy experiences in English language teaching

Tertiary education in South Africa faces many challenges. In general, students who enter tertiary institutions lack proper preparation for the academic courses they enrol for (Jaffer-N'gambi & Czerniewicz 2007). Jaffer-N'gambi and Czerniewicz 2007 (2007) state that a lack of computer skills, integration of learning experiences with ICTs and previously acquired structures of knowledge, and an inability to engage with learning material at a higher cognitive level, are common problems among students. In view of the challenge mentioned, a number of studies have been carried out on digital literacy and teacher competence, but this exploration focuses on initiatives by teachers as they adapt to the digital literacy in English and its pedagogy.

Even though technology cannot address all the educational challenges faced by learning institutions and individuals, it has the potential to widen conventional English teaching and learning activities under certain circumstances. Thanasoulas (2001) contends that students who do not come from suitable educational backgrounds are unable to accurately understand and interpret information that is presented to them through technology. For computer technology to support cognitive functions and encourage higher learning outcomes, teachers have a duty to reconceptualise the way digital tools are used in the integration of theory and practice (Jonassen 2006). The reconceptualised procedure should result in a shift away from a teacher-centred approach to instruction that attempts to engage learners in activities that support knowledge construction. In the modern paradigms of language teaching, teachers are not necessarily knowledge reservoirs, but are facilitators who should enable learners to discover and understand their environment (Hokanson & Hooper 2000). Contrary to the above view, digital immigrant teachers (teachers born before the invention of computers and are adapting to use of computers in teaching) assume that learners have remained the same over the years and that the same methods that were used when the teachers were students would work for the current generation. As a challenge to digital immigrant teachers Prensky (2001) indicates that learners of this generation have a different brain structure – a claim that supports the view that teachers have to change their pedagogical approach. Learners of the digital generation in secondary schools seem not to tolerate teachers reading to them from books and providing doubtful explanations and unsubstantiated arguments. Prensky (2001) posits that digital immigrant teachers should understand the digital generation's digital habits, interests and motivation, and develop methods that meet their educational demands and expectations.

In the teaching and learning environment, the teacher is one of the resources that learners may learn from. In this context, teachers should engage learners in experiences that challenge previous conceptions of their existing knowledge allow responses to drive lessons, seek elaboration of learners' initial responses and encourage the spirit of questioning as well as developing an autonomous initiative (Hague & Payton 2010). In support of the above view, Savage and McGoun (2015) say that the teacher's role is to create an enabling environment that is interactive, immersive and informative. Technological integration will in this case involve the creation of an environment by teachers that promote learners' participation in creating knowledge structures and

problem-solving techniques in English language learning, in which digital literacy practices are key components.

Technological development studies, teacher competence and roles in classroom practice have been done by several researchers, but Eaton (2010) contends that learning styles are changing and consequently teaching and assessment styles should also change. In support of the change process Pahomov (2014) says that technology has become part of our lives and that the change from pen and paper to digital technology has far-reaching implications for teaching methods and approaches. In managing the change process, there is a need for a strategy to bridge the cultural and linguistic divide of digital literacy practices separating today's English teachers from their learners. Prensky (2001) says that digital immigrant teachers are attempting to teach digital natives through methods that are no longer valid and that the only option is for teachers to change their methods and approaches because natives will never go back to traditional learning methods. Thus, I explored digital literacy initiatives by English teachers in township secondary schools in Gauteng. For Prensky's (2001) discoveries and recommendations regarding multimodal text presentation and educational games to work, teachers in township secondary schools must have an awareness of digital literacy and digital competence as well as its methodology in order to be able to address the learners' needs.

However, Prensky (2001) underplays demographic differences and issues of access to electronic or digital tools, which is a common constraint in South Africa because of limited resources in townships and rural areas. A typical classroom in African contexts is much more diverse, with learners from a range of backgrounds. Some learners do not have computers at home while other learners some do not have electricity and internet connections. In some South African contexts learners are just not interested in educational games or cyber activities. This requires of teachers to find methods of dealing with the new syllabus requirements. English teachers need to be creative in order to be able to plan, organise and present information in a variety of formats for multiliteracy learning.

Teachers' beliefs and strategies should coincide with the different roles of computers. While Jonassen (2000) understands the computer as a tool, most teachers in disadvantaged schools spend time learning how computers work, thus compromising the role of a computer as a cognitive tool.

The focus of this study is on English language teachers and how they teach digital literacy. In view of this focus, teachers should learn from each other and coordinate the learning programme. In the case of English, teachers need to connect, link, relate and integrate their content on language structures (grammar), literature (poems, short stories, drama and novels), communication (speeches and debate) and writing skills to digital literacy in order to satisfy the learner's needs. In the next section, I discuss broad contextual factors of teacher initiatives regarding digital literacy.

1.8.3 Broad contextual factors of teacher initiatives on digital literacy in the English syllabus

Curriculum changes as transformative programmes had positive and negative impacts on both teachers and learners in secondary schools. Curriculum change directly affects teachers' planning in the pre-active stage of teaching and the subsequent delivery of the lesson (Tsui 2007). Teacher initiatives on digital literacy take place within a broader context of factors in the education and socio-economic environment. Yonezawa, Jones and Singer (2011:12) state that

adverse teaching conditions in urban schools such as overcrowding or outdated textbooks, pose challenges to teachers' ability to be successful with their students. In addition, difficult community contexts of impoverished neighbourhoods, homelessness, or gang violence can contribute to a challenging professional context.

Apart from teaching, marking, supervision of extra-curricular activities and personal matters, the conditions mentioned above may be a source of stress for teachers, which may result in early retirement of teachers or changes in profession. In such situations briefly described above, the classroom management demands and the changing nature of digital age learner requirements challenge teachers' conditions of service. As a result of a ubiquitous digital environment, today's learners have different expectations and think and process information differently (Hague & Payton 2010). To meet the learners' needs teachers need to be creative in order to meet the current generation's learning demands.

Tsui (2007) and Uys et al. (2007) contend that teachers need to decide on methods, strategies and suitable materials to use in the cognitive age. All teachers require knowledge of the curriculum aims and objectives and the environmental factors. Calderhead (1984:23) posits that

through planning, teachers translate syllabus guidelines, institutional expectations and their own beliefs and ideologies of education into guides for action in the classroom. This aspect of teaching provides the structure and purpose for what teachers and learners do in the classroom.

In relation to the success of teaching in the digital age, teachers need to include the teaching of digital literacy in planning their English lessons, and their activities should clearly indicate the role of digital tools in their classes. Digital literacy cannot be taught removed from other aspects of language. In addition to the content, teachers should expose learners to literacy of multimodal texts available online. In each of the language learning components, the teacher should select strategies that suit learners' specific needs in line with the objectives of the curriculum. In view of the teachers' roles and their understanding of paradigm as a set of beliefs guiding action (Creswell 2013), it is important to understand the teachers' beliefs and values regarding the space for digital tools and digital literacy in their planning and organisation of English language pedagogy at secondary level. In relation to this professional responsibility, Lautenbach (2011) indicates that Gauteng Online, a government initiative, aims to improve the quality of teaching and bridge the digital divide through access and connectivity for digital literacy in secondary schools. Warren (2001) states that the adoption of information and communication technology and e-learning programmes at both policy and implementation level is imperative for effective teaching and learning in classrooms. However, the objectives of the project have not been fully realised, as a lack of maintenance and connectivity challenges have plagued the Gauteng Online project (Lautenbach 2011).

Township schools have been characterised by irregular use of computer learning and teaching programmes resulting in inadequately prepared matric. Proficiency in English is a basic entry requirement to tertiary education (Stephen, Welman & Jordan 2004). A lack of understanding of grammatical structures and a lack of English competence among learners is a cause for concern in the education sector in South Africa. Evidence from research at universities clearly indicates that poor proficiency in English affects academic performance. I was prompted to explore teachers' initiatives on digital literacy in English because of the claims that poor proficiency in English affects academic performance negatively.

1.8.4 Township English teachers' adaptation to digital literacy in English

Progressive teachers always adjust to changes taking place in the curriculum. Lantieri, Kyse, Harnett and Malkmus (2011) support this view and say that teachers enrol for transformational professional development programmes designed to improve stress management skills, thereby increasing their resilience. Discoveries from teacher resilience studies aimed at improving the welfare of teachers in areas such as relation trust and increased mindfulness confirm that adaptation is a process and not an event. Research from across the world on teacher resilience has yielded programmes such as teacher-learner yoga groups focusing on mind-body health in an effort to reduce stress levels (Lantieri et al. 2011). The examples of physiological adaptive initiatives are not necessarily the focus of this study. This study takes a close look at adaptive teacher initiatives on how digital literacy is taught and used in English language teaching and learning. In the process of exploring teacher initiatives, I review key concepts embedded in Bandura's (1977) social cognitive and efficacy theory namely verbal persuasion, performance accomplishment, vicarious learning and psychological feedback.

1.8.5 Conceptualising teacher initiatives and digital literacy in the South African English syllabus

Based on Bandura's (1977) social cognitive theory, this study focuses on the interaction among the four major elements of teaching and learning, namely verbal persuasion, performance accomplishment, vicarious learning and psychological feedback. The elements of teacher professional practice are explored in the context of the social learning theory, and the four elements of the theory are used to account for the teachers' actions regarding digital literacy in the implementation of the English curriculum. Teacher initiatives in this study refer to teachers' creations and inventions as they attempt to accommodate digital tools for digital literacy within the context of English language teaching. Their resilience is shown by their learning of new skills, re-skilling and personal motivation to develop competence and proficiency in skills, connecting, texting, collaboration and video gaming in educational contexts. Learning new skills and modification of existing skills is a process of adjusting and adapting to new settings in English teaching and learning. Theoretically, teachers use their vicarious experience, verbal persuasion and performance accomplishment as psychological strategies to

overcome challenges in the work place. So, each time they are successful, psychological feedback motivates them to cascade to the next level. In this study, the theory guided the exploring of teacher initiatives on digital literacy. Teacher initiatives are part of vicarious learning and motivation. Each teacher action in professional practices is linked directly and indirectly to the four pillars of the social cognitive theory, graphically presented in figure 1.1.

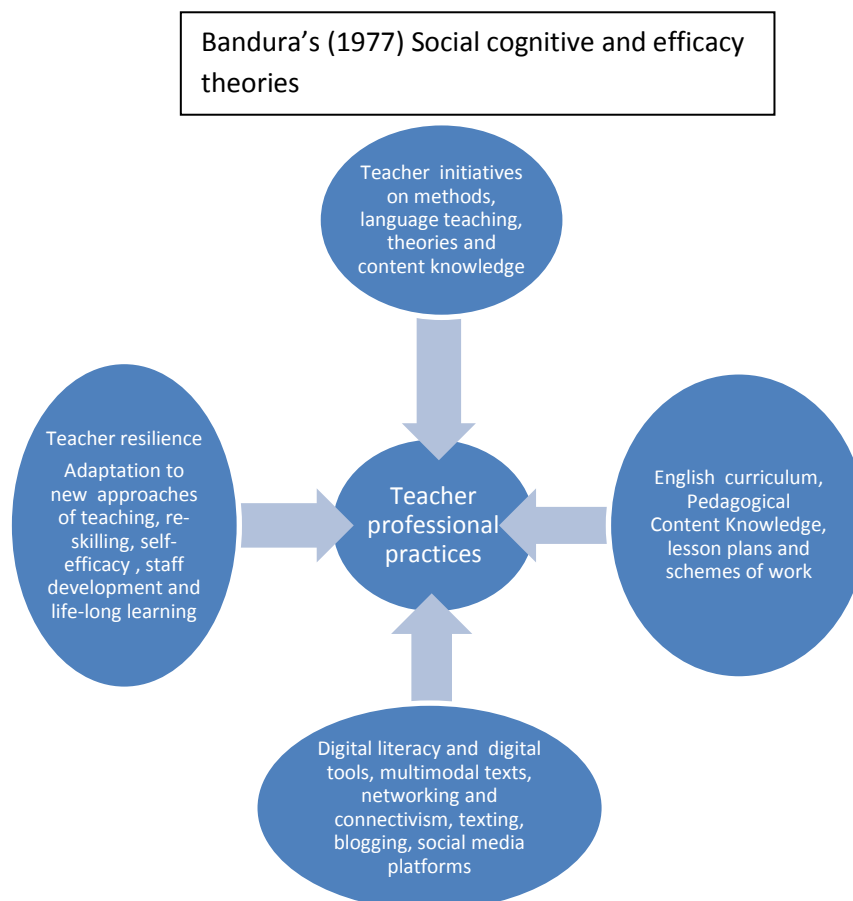


Figure 1.1 Four broad concepts influencing teachers’ professional practices (own design).

I believe that the four concepts are in constant interaction with each other. Teachers’ initiatives on methods, language teaching theories and content connect to the digital literacy practices to fulfil the curriculum goals. In this case, initiatives by teachers in the pre-active stage influence inclusion of digital literacy and use of digital tools to accomplish the desired outcomes. There is a need for resilience as teachers adapt to new situations, accept new technology and adjust to new approaches in presenting content to learners (Hague & Payton 2010). Teachers’ actions and decisions are made in the context of the requirements of the English syllabus.

According to the English syllabus teachers are to incorporate pedagogical knowledge in planning classroom activities (Tsui 2003). Lesson plans, schemes of work or work schedules are the documentation developed during the pre-active or preparation stage of the English language teaching programme. This preparation takes into consideration the broad aims and objectives of the subject. In the process of planning, the teacher should reflect on how the tasks will be accomplished using digital tools and other supporting material for digital literacy. The key role for teachers is to design activities that provide a variety of texts and connect learners to resources and learning platforms (Leask & Pachler 2013, Hague & Payton 2010). In summary, key issues discussed in this section include a brief background of the South African curriculum, concepts related to the teaching of English in resource-constrained secondary schools, and theories guiding the exploration of resilient teachers' adaptation to the teaching of digital literacy in English. The South African English syllabus for secondary education recommends the use of digital tools in teaching English but does not clearly state the strategies and approaches to be used to achieve the desired outcomes. From published literature, it is clear that township secondary schools struggle with access to resources for teaching digital literacy and therefore teachers need to adjust to their circumstances through resilience.

1.9 Research methodology

This research is a qualitative study. The qualitative approach is concerned with subjective understanding of attitudes, opinions and behaviour. Qualitative research is grounded in knowing sciences that allows researchers to talk about action, experiences and attitudes. For this study the qualitative approach is ideal to help the researcher understand the social problem in its natural context (Silverman 2016). It provides an interactive platform for researcher and participants to understand the phenomenon under exploration. Methodology refers to a systematic way of solving a research problem. In other words, it is the scientific study of how research is done. The process includes the various steps that are generally adopted, and important research choices made in studying the research problem along with the logic behind it. For this exploratory case study, I sought to understand teacher initiatives on digital literacy using a social science approach. I used a qualitative approach, exploratory case study, semi-structured

interviews, non-participant observation and document analysis to explore teacher initiatives on digital literacy.

1.9.1 Research design

This research is an exploratory case study. A case study is a systematic and organised procedure designed to explore a phenomenon. According to Yin (2012) a case study includes designing the study, collecting data, and analysing and presenting the results in a particular format. This design was chosen in line with the nature of the exploration and to become familiar with unknown situations. The process involves a selection of participants and sites as cases, and putting procedures in place that adhere to the case study design principles as indicated in chapter 3 of this report. The initiatives by teachers in resource-constrained secondary schools made the settings unique for the particular cases that were explored. In support of this view, Creswell (2013:20) posits that

(i) individuals seek an understanding of the world in which they live and work. They develop subjective meanings of their experiences. These meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrow the meanings into a few categories or ideas.

In the context of this study, subjective meanings of how digital literacy is used constitute the multiple realities based on participants' views in their respective contexts. Mouton (2009) states that in a case study research design, operationalisation takes the researcher to find and collect data to be analysed. Creswell (2013) says that the field of research includes many individuals with different perspectives and that all contribute to create the fabric of qualitative research. Denzin and Lincoln (2005) contend that the combination of multiple methodological practices, empirical materials, perspectives and observers in a single study are best understood as a strategy that adds rigour, breadth, complexity, richness and depth to any inquiry. In this exploratory case study, triangulation became the simultaneous display of multiple and refracted realities.

Realities of teachers' initiatives are a result of co-construction of knowledge by myself and the teachers teaching English at secondary level in Gauteng township schools. The knowledge created is shaped by individual experiences (Creswell 2013). My exploratory case study produced a report showing patterns on the basis of the voices of the participants and their lived experiences. Scott, Vanderstoep and Johnston (2009)

contend that qualitative researchers explore how individuals construct their meaning and how these individual meanings shape the group in a retrospective reflection on experience in contextual environments. English teachers in selected secondary schools participated in the study by sharing their views and narratives in teaching digital literacy. Through the interview process, lesson observation, field notes and document analysis, I was able to gain a better understanding of teacher's strategies on teaching of digital literacy.

1.9.2 Selection of participants and sites

Participants were drawn from the Tshwane District in Gauteng. Details of the selection process are given in the table 1.1.

Table 1.1 Research sites and number of participants

District	Schools	Number of participants
Tshwane North	Secondary school A – Hammanskraal	3
	Secondary school B – Soshanguve	3
	Secondary school C – Soshanguve	3

This research focused on schools located in the townships that have computer teaching and learning facilities. The selection was influenced by the fact that these schools were previously disadvantaged and that the schools do have computer centres. The reason for choosing the listed secondary schools in the selected district was a result of convenience and potential data sources.

Selected teachers participated voluntarily in the study. The total number of participants was nine English teachers. Data collection took place on the school premises over a period of three months. Participants interviewed were Grade 9, 10 and 11 English teachers.

As the nature of the research influences the choice of instruments for data collection, interviews, observations, field notes and document analysis were used as major data

collection instruments (Denzin & Lincoln 2005). Semi-structured interviews are understood as a process of creating knowledge through understanding the experiences related to the phenomenon and observation was used to support the process as a data collection procedure in qualitative studies.

1.9.3 Semi-structured interviews

I used semi-structured interviews (cf. Addendum A) to gather data about English teachers' initiatives on digital literacy. I collected data on methodological integration in language teaching. I sought to understand how teachers take initiatives on digital literacy in English teaching. During the semi-structured interviews open-ended questions with guidelines for directing the conversation were used to explore the topic under exploration (Creswell 2013). The interviews lasted about an hour for each session. The semi-structured interviews focused on the role of digital literacy in classroom teaching and learning and the teachers' creative role in developing learning material. Semi-structured interview questions sought to tap into the teachers' experiences. Data collected were among others, on teaching methods used, activities prepared for the learners, and how these supported their learning of English as a second language.

1.9.4 Non-participant lesson observations

Data collected using this lesson observation instrument (cf. Addendum K) included teacher actions and the role of learners in the use of digital tools. This included information on methodologies and digital tools used to teach aspects of English such as grammar, literature, creative writing and reading strategies for comprehension passages. An observation guide helped me to focus on the aspects under exploration (Creswell 2013). Two English lessons by each participant were observed and the lessons were audio recorded to facilitate analysis.

1.9.5 Document analysis

I analysed documents such as work schedules, lesson plans, learner-designed activities, assessment guidelines and assessment criteria. Interrogating the selected documents provided data on lesson outcomes as well as methods used by teachers in teaching

English in the context of digital literacy. The critical focus was on the initiatives taken to apply digital literacy in the teaching of English.

1.9.6 Data analysis and interpretation

In this study data were analysed according to themes. According to Brian and Clarke (2006) thematic analysis is a method of organising research data. Data collected from semi-structured interviews, consisting of interview transcriptions and recordings were reduced and organised and qualitatively encoded. Data from non-participant lesson observations, field notes and notes from documents analysed were also encoded. Data on teacher initiatives regarding the teaching of digital literacy, pedagogical content knowledge, digital tools, competence, and software requirements were used to develop themes.

The data codes were guided by the research questions (Boyantzis 2007). The broad research questions and secondary questions informed the semi-structured interview questions. The semi-structured interview questions, non-participant lesson observations and notes from analysed documents form an organised format of restructuring human experiences in social sciences research in order to make meaning that is heavily reliant on language (Seidman 2013). Semi-structured interviews contextualise human behaviour and provide gateways to understanding the actions. The responses, which were the constitutive elements of lived experiences, were then patterned. The process of data analysis included relating and making connections between verbal views from semi-structured interviews and human actions from non-participant observations. Thematic analysis provided insights into the data collected. In this research, data provided insights into teacher initiatives such as creativity, networking and life-long learning in participants' classroom practice. The emerging themes indicated the pedagogic innovations taking place in the teaching of English as a second language in township secondary schools.

In this research thematic analysis, which is congruent with qualitative research studies (Boyantzis 2007), was used. Qualitative data from interview conversations may not be reduced to mere scores because of the nature of the data. Thick descriptions provide an informed understanding of the teachers' initiatives in context (Bogdan & Biklen 2003). In this case, data provided on the use of digital tools and digital literacy tasks were

analysed from the documents such as teaching notes, social media texts, printed school magazine texts and cartoons.

1.10 Quality criteria

Credibility, dependability and confirmability are key quality criteria for trustworthiness in a qualitative research study. Credibility in this case refers to the accuracy with which I interpreted the data provided by the participants. Credibility is increased by the time spent with participants, thereby gaining insight into their lives. On the same continuum, dependability refers to quality of integration within the research process. In this qualitative study an exploratory case study design with semi-structured interviews, non-participant observations and document analysis were used as data collection instruments. Confirmability refers to how well the collected data support the research findings. The use of interviews and subsequent application of observation instruments and document analysis were designed to ensure trustworthiness (Creswell 2013). In this research study, teachers were interviewed three times using the same interview questions to ascertain trustworthiness. The process of revisiting the same participants and asking the same questions improves the quality of data collection. According to Yin (2016) participants confirm their points of view if asked the same questions at different times. Continuous data analysis refines the data collection process and adds value to the research process.

1.11 Ethical considerations

I applied for ethical clearance with the University of Pretoria. The application for ethical clearance involved detailed explanations of how data were to be collected. This process included how the semi-structured interviews were carried out, and how the lesson observations and the analysis of documents were done. I also indicated how I would deal with special circumstances surrounding data collection. As is discussed in detail in chapter 3, I followed all the qualitative case study procedures and the ethical clearance was approved. I applied for permission to do research in the Tshwane North district from the Department of Basic Education and permission was granted. I made all information about the study available to participants. I indicated the nature of my study, the purpose, study sites, rights of participants, protection, privacy and confidentiality of information of participants. To ensure focus on data capturing, I used open-ended questions in semi-

structured interviews. I had to adhere to anonymity by using pseudonyms. Participant contributions were confidential. The teachers who were selected as participants and the school authorities only participated after signing informed consent forms (cf. Addenda D, F and H).

Other primary ethical considerations included accuracy of data within a moral context. Christians (2005) posits that confidentiality must be assured as the primary safeguard against unwanted exposure. I chose township secondary schools because they are geographically located in highly populated environments characterised by overcrowded classrooms. My choice of township secondary schools was on the basis of the contextual factors affecting the teachers' pedagogical choices. Township secondary schools are dominated by black learners residing in the informal settlements and high population density areas. Soshanguve is formerly a Bantustan area and the population's income levels are generally low, resulting in a lack of teaching resources and constrained learning. In this research, I avoided fabrications, fraudulent materials and contrivances which make the process unscientific and compromise the study. To avoid the above-mentioned pitfalls, I used triangulation and member checking to ensure trustworthiness.

1.12 Chapter outline

Chapter 1 Overview of the study

This chapter introduces the research by way of providing background information to the study, context and a statement of purpose. It also attempts to give a value of the research and situating the investigation in the geographical location. The discussion provides insights into the researched areas on the teaching of digital literacy in English, as well as grey areas pursued in this investigation.

Chapter 2 Conceptual framework

In chapter 2 the work by other researchers in the field of digital literacy in English is discussed. Other research findings and recommendations, as well as the knowledge gap that needs further investigation are discussed. This discussion provides insight into the gaps and voids that this research intended to fill. The relationship between concepts and theories of language learning in the context of exploring teacher initiatives on teaching digital literacy in English is also explored.

Chapter 3 Research design

In this chapter the paradigmatic orientation, the research design, research instruments used and the procedures used for data collection are discussed. Information on the data analysis methods and procedures used is also presented in this chapter. In this qualitative study, I chose an exploratory case study, semi-structured interviews, non-participant observations and inductive qualitative data analysis procedures in exploring teacher initiatives on digital literacy in English language teaching.

Chapter 4 Findings and discussion

In chapter 4 the focus is on the findings on the strategies used by teachers to teach digital literacy in English in township secondary schools. Themes presented in this chapter include teachers' understanding of digital literacy, strategies used in teaching digital literacy, challenges faced by teachers in teaching digital literacy and their recommendations in relation to the syllabus guidelines. A discussion of the findings concludes the chapter and foregrounds the conclusions and recommendations in the next chapter.

Chapter 5 Significance and recommendations of the study

The conclusions from previous research and how their recommendations provide insight into current solutions to new pedagogic strategies for language teaching are discussed in chapter 5. Summaries of teachers' conceptualisation of digital literacy in English language proficiency programmes are presented. Reflection on teacher initiatives in response to the changing times commanded by technological developments and innovations are also presented. The chapter concludes with a presentation of recommendations that could assist education planners, practising teachers and stakeholders in improving the teaching of English as a second language in township secondary schools.

1.13 Conclusion

The introduction and background of the research is presented in chapter 1. The chapter presents the purpose of the study, research questions, aims and objectives, and the general assumptions of the research. Key concepts of the research are clarified and the research methodology highlighted. Methodology includes the data collection instruments and procedures. The chapter also presents the data analysis and ethical considerations for the study.

CHAPTER 2: LITERATURE AND CONCEPTUAL FRAMEWORK

2.1 Introduction

This study is predicated on the interaction between digital literacy, language learning theories, teacher resilience and initiatives in English pedagogy. The review of the origins, key components and operationalisation of digital literacy in secondary schools is guided by learning theories, namely behaviourism, cognitivism and constructivism. This exploration is guided by language learning theories which inform human actions. Teachers' initiatives on digital literacy are a psychological process in response to the presence of digital tools in the teaching and learning space. The focus of this study is on how teachers teach digital literacy in English. The study borrows from Bandura's (1977) self-efficacy psychology in order to understand teacher resilience as adaptation to technological development. The link between Bandura's (1977) self-efficacy theory and adaptive resilience is that teachers use vicarious experience, verbal persuasion and psychological feedback as coping strategies or adjustment to stress in new digital literacy pedagogy. The literature review reflects on the concept of digital literacy in English in relation to teacher resilience. In this chapter, I review theories applied in digital literacy teaching, global perspectives, the South African context on digital literacy, adaptive resilience on the development of new literacies for teachers, key components and strategies of digital literacy practices, connectivism and networking, and teacher initiatives on planning for teaching and using digital literacy. The review begins with an overview of the background to the South African curriculum and its justification to include digital literacy in the English syllabus.

2.2 Background to the South African English syllabus

The background to the South African English syllabus is important in this study because it provides context and historical antecedents of the changes and innovations in the English syllabus. The current South African English syllabus is a product of previous and continuous evaluation and review of aims and objectives, content and pedagogy. The reviews resulted in Outcomes Based Education (OBE), Curriculum 2005 and the National Curriculum Statement (NCS) leading to the current Curriculum and Assessment Policy Statement (CAPS). The changes and innovations were influenced by a number of factors, which include technological development and innovation in line with global

demands. In view of these curriculum changes, changes on how content should be taught were implemented in the English syllabus. The inclusion of digital literacy in the syllabus was limited and no pedagogic prescriptions were specifically indicated. Despite changes necessitated by technological development, reports of poor performance by matric graduates in tertiary institutions challenged education planners to review the curriculum in line with technological demands (Mafenya 2013). Digital literacy was included in the syllabus under learning and teaching material that supported the teaching of languages. In view of the focus of this study, an exploration of teacher initiatives on the basis of a syllabus change necessitated by inclusion of digital literacy helps to understand the strategies and approaches used by teachers to support the teaching of English as a second language in South Africa.

Most learners from South African secondary schools in townships are predominantly mother-tongue speakers of African languages. Historically, South Africa's languages in education policies have been influenced by political policies – particularly in the post-apartheid era when eleven languages became official languages. The language policy in the post-apartheid era was a welcome gesture despite it not dislodging the hegemonic dominance of English in both education and business (Mutasa 2006, Howie, Venter & Van Staden 2008). The dominance of English in both education and business positions it at the top of the list of languages used in South Africa and learners from townships are forced to use it for learning at school. Since English is not their first language, learners in township schools struggle to use English proficiently as a second language in academic domains. In view of the challenge with proficiency in English, the inclusion of digital literacy is a strategy aimed at improving proficiency among learners (Hague & Payton 2010). I therefore sought to explore the teacher initiatives in the teaching of digital literacy – particularly in resource-constrained, township, secondary schools. Rocha (2016) connotes that the inclusion of digital literacy in the English syllabus is to help improve teaching strategies and create learning opportunities in English. Previous research indicates approaches and models on improving English language proficiency but do not provide sufficient pedagogic strategies for teaching and using digital literacy in English.

By using Cummins' (1981) international research findings, gaining Basic Interpersonal Communicative Skills (BICS) in a second language requires almost two years of exposure to the target language (Moodley 2013). In the same vein, gaining Cognitive

Academic Language Proficiency (CALP) requires an additional 5 years on the assumption that all variables, which include good teaching, availability of resources and teacher-learner ratio are in place (Cummins 1981, Moodley 2013). In support of the need for proficiency in English as a second language, the Progress in International Reading Literacy Study (PIRLS) report (2015) says that by the time learners from township schools switch to English as a second language, the process has far-reaching implications in terms of literacy, particularly where digital literacy is involved. The implication in the context of this study is that learners may be affected by the lack of English proficiency after they have enrolled for tertiary education. I argue that the use of digital literacy in English teaching may support proficiency. In support of the argument above, McNulty (2014) says that digital literacy teaching in English is critically important in achieving proficiency because it provides language learning opportunities, digital resources for research in English language and communicative ability in the digital space. In addition to learning communicative ability, digital literacy also provides opportunities for the creation of texts, writing, and different reading patterns and strategies, which support English language learning. In my experience as a university lecturer, university students' lack of English proficiency has been one of the justifications for teaching Foundation English for communication at tertiary institutions. For this exploratory case study, I sought to explore teacher initiatives on the use of digital literacy in teaching English to improve proficiency. English proficiency is attained through the strategies and initiatives taken by English teachers to support learners in line with the syllabus guidelines.

The syllabus guidelines for English language contained in the CAPS (DBE 2011) recommend four language teaching methods, namely communicative language teaching, text based approach, discourse and the process-based approach (DBE 2011). One of the aims of the English syllabus is to provide knowledge and skills to learners in the South African context in order to learn to use English effectively in expressing ideas and interacting with different groups of people from similar linguistic backgrounds across the world (DBE 2011). The methods recommended in the CAPS (DBE 2011) include the use of digital tools and teaching digital literacy as a way to address learner needs, previous socio-economic imbalances, provide access to information repositories and to respond to global digital imperatives. Digital facilities mentioned in the English syllabus (DBE 2011) include Facebook, internet sites, blogs, web pages, social networks, videos and radio

programmes. The above digital-based resources should be used where possible to teach English in South Africa in order to attain the outcomes of the English syllabus. The digital-based resources listed in the syllabus create an impression that all schools in South Africa have access to them. In township secondary schools, teachers and learners struggle to access the internet and some teachers do not possess the requisite skills for teaching digital literacy. This study explores how teachers teach digital literacy in English.

The inclusion of digital literacy in the English syllabus means that teachers need to integrate technology in their teaching, and devise strategies for the teaching of digital literacy. In support of pedagogic strategies, Belshaw (2011) says that digital literacy teaching is possible in contexts where computers and other digital facilities are available. On the same continuum McNulty (2014) posits that the teachers responsible for teaching and coordinating digital literacy programmes should have a positive attitude and skills for the teaching and using of digital literacy. The challenge facing English teachers in the South African context is a lack of digital competence skills and strategies that will improve learner English proficiency – particularly in resource-constrained environments. The strategies that should be used to teach digital literacy in English are not clearly stated in the CAPS (DBE 2011) document. I, therefore, sought to explore the initiatives taken by teachers on the teaching and use of digital literacy in the teaching of English language in township secondary schools. In the context of South African English, language learning theories (behaviourism, cognitivism and constructionism) have direct links to the teaching of digital literacy as teachers make adjustments and adapt to new classroom settings. These theories provide guidelines for teachers to make informed choices in planning, execution and evaluation of a teaching and learning programme. Behaviourism supports blended learning incorporating digital literacy, while cognitivism supports critical thinking and problem-solving. Insert a sentence on constructionism, e.g, collaboration, cooperative and interactive work. Literature on the South African curriculum has previously recommended the teaching of digital literacy and teacher professional development with technology integration to support the teaching of English. In this study, my understanding of language learning theories helps to explore how teachers teach strategies of teaching digital literacy in English. The background of the curriculum has a progressive connection with current studies linked to technological development.

2.3 Current studies on digital literacy in the South African English syllabus

Current studies and research in technological development in Africa positions South Africa as an advanced player in terms of access to networks, digital tools and digital literacy (Kajee & Balfour 2011). This notion of technological development portrays South Africa as more advanced in digital connections and access to digital tools than other countries in the region. However, on a global scale, the country is a relative minor player. In view of this, Kajee and Balfour (2011) strongly call on government, industry, educators and educationists to, through collaboration, address the digital skills shortage to transform the country into an ICT powerhouse. Street (2003) argues that the demand for digital skills in industry and other facets of life is what the new generation requires – new skills and new ways of thinking, and the appropriate pedagogy for teaching digital literacy. Kajee and Balfour (2004) and McNulty (2014) recommend the recognition of out-of-school literacy practices as part of language learning. In this context, learners' out-of-classroom literacy practices have important implications for the classroom activities, and the school system should also develop pedagogic initiatives and strategies to help teachers in teaching digital literacy to improve proficiency.

Discussions on literacy and digital development in African and other parts of the world have also led to the emergence of multiliteracy courses in schools and colleges, which require the innovation of curricula in education to include digital literacy. Technological development and inclusion in the curriculum necessitates the teaching of digital literacy in schools. For example, the curriculum change in the South African basic education system saw the inclusion of the teaching of digital literacy in English and other subjects (Reid 2016). At tertiary level, the University of Johannesburg has embarked on a digital intervention programme to improve English proficiency and digital competence among students from digitally under-resourced environments (Kajee & Balfour 2011). The mentioned examples support the development of the teaching of digital literacy in different subjects and teacher professional development courses such as New Literacies for Teachers (NLFT).

On the digital literacy platform, Reid (2016) says that the introduction of New Literacies for Teachers (NLFT) at the University of the Witwatersrand is a development in providing pedagogical and digital skills for young teachers to use in the South African curriculum. The preparation of teachers at this level is a mitigation measure that supports the

teaching of digital literacy in English in schools. In this exploratory case study, I focus on exploring the initiatives taken by teachers in township settings on how digital literacy is taught in English. On this technological development continuum, teachers are making adjustments to adapt to technological development because the English syllabus change has necessitated the inclusion of digital literacy. The process of integrating language learning theories and the teaching of digital literacy links with teacher resilience in English teaching.

2.4 The significance of teacher resilience, language learning theories and digital literacy in the English syllabus

The inclusion of learning theories in digital literacy teaching culminates from the traditional language learning theories. Selected language learning theories provide guidelines on how teaching of digital literacy can be predicated on theoretical principles. Theories of language learning inform the study on how digital literacy is taught and used in the teaching of English in secondary schools. Behaviourism is a psychological theory stipulating that learning takes place as a result of the stimulus-response (Barak 2006). Behaviourists' experiments with animals show that animal behaviour changes as a response to stimuli. This has formed the basis for explaining human learning over the years (Ellis 1994). Over the last decade researchers have ascribed e-learning to behaviourism while blended learning has been aligned to cognitivism. The inclusion of the learning theories in this study informs the reader on the different roles of computer programs in teaching and learning of English. For example, cognitivism places learning in the power of the learner and therefore regards a computer as a tutor (Young 2002). Piaget and others believe that artificial intelligence can emulate the thinking and problem-solving of domain experts (Kim & Bonk 2006). The examples given above indicate the role of the computer in both behaviourists and cognitive domain. On the same continuum, constructivist theories of learning dominate today and propagate that learning takes place through active construction of knowledge in different contexts necessitated by social interaction (Young 2002). The views on constructivism place virtual learning at a high level of collaboration, a feature that is advocated by digital literacy practices because it personalises learning and encourages technological integration. The three learning theories are linked to teacher initiatives on digital literacy and its use in the teaching of English language. Views from Bandura's (1977) social learning theory

support the learning theories in that teachers' ability to make pedagogical adjustments is part of resilience in their professional duties as they adapt to the motivating presence of digital tools in classroom teaching and learning programmes. Figure 2.1 illustrates the relationship between concepts in digital literacy pedagogy and the learning theories.

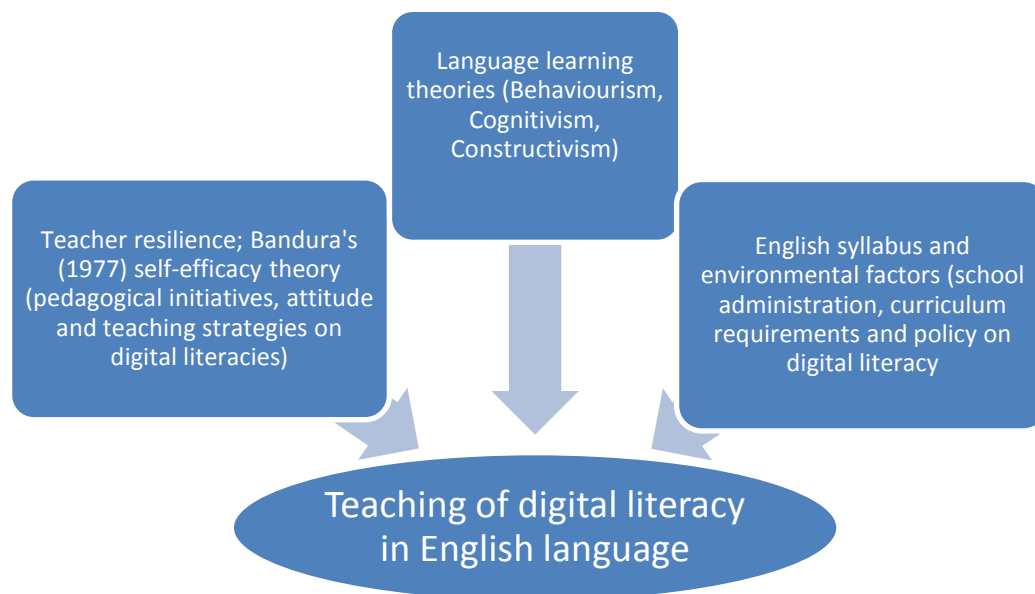


Figure 2.1 Relations between resilience, language learning theories and English syllabus

Each bubble in figure 2.1 has an arrow indicating its connection and contribution to the teaching of digital literacy in English. As shown in figure 2.1, the success and failure of digital literacy depend on the role of teachers in creating a strong link between the syllabus, learning theories and own resilience. The learning theories indicated above guide the exploration of how digital literacy is taught and used in secondary schools in the teaching of English. As mentioned earlier, constructivism provides lenses on how teachers and learners as partners in teaching and learning connect in different learning networks and work collaboratively in the learning of English as a subject at secondary level. The relations with the three theories are briefly discussed below.

2.5 Application of English language learning theories in digital literacy

The behaviourist, cognitivist and constructivist language learning theories are used to explore the initiatives and strategies used by English teachers in teaching digital literacy. The study does not seek to explore the theories *per se*, but to use them in exploring

teacher initiatives on digital literacy. According to Skinner (1938) people can learn more effectively if the environment is carefully controlled. As a behaviourist, all behaviour is a form of response to a stimulus. Key proponents of behaviourism include Watson, Thorndike, Guthrie, Pavlov and Skinner. Behaviourism as a language learning theory encapsulates learning through stimuli and response (Barak 2006). The technological advancements in e-learning and digital literacy are linked to theories of learning. The computer provides the stimulus and learners respond to the stimulus by accomplishing tasks which eventually lead to achieving the goal. In cases of Computer-Assisted Instruction, the feedback provides reinforcement – a psychological feature that complies with behaviourism tenets. In the context of this study, teachers in township schools should combine their knowledge of learning theories with technological skills in order to help their learners improve the use of English as a second language.

Cognitivism as propounded by Piaget, Ausubel, Bruner and Kohler contend that learning depends on the cognitive power of the learner (Hafner 2014). Wang (2008) says that cognitive learning is a process which takes place in the mind when mental constructions yield knowledge. Computers are therefore creative cognitive tools used in constructivists' environments in the process of attempting to understand the world and its systems. In the digital literacy trajectory, the computer as a digital tool works as a tutor referring to technological development based on theories of artificial intelligence and theories of information processing (Thanasoulas 2001). English teachers use principles from cognitive psychology to design digital tasks and to teach English skills to learners.

Constructivist theories propagate that learning is achieved through active construction of knowledge in different contexts and to serve different purposes (Hew & Cheung 2008). In addition to active construction of knowledge, Wang (2008) says that the belief of constructivism is founded on the premise that knowledge is actively constructed by learners rather than transmitted by the teacher. In the same vein, learners are active knowledge constructors rather than passive recipients. This study borrows from both cognitive and social constructivism. While cognitive constructivists believe that knowledge is individually constructed, social constructivism posits that knowledge is a product of collaborative construction, a feature that is commensurate with digital literacy's connectivism, sharing, curating and networking (Bell 2011). Knowledge construction takes place in a socio-cultural context mediated by discourse and language (Wang 2008). According to Rose (2009) language learning takes place through sharing,

interaction, negotiation and transfer with the support of digital tools and network. Language is fundamental in this digitally networked space as it provides a medium for communication for learning and teaching (Crystal 2011). Based on the above views, theories and language converge to explore concepts in research.

The three theories provide a framework to guide this study in understanding the role of theoretically set beliefs on how knowledge is constructed in the information age. The behaviourists are strongly inclined to e-learning and understand digital literacy as a learning process driven by the psychological stimulus-response reactions from human interaction. Behaviourists state that certain stimuli produce specific reactions in humans or animals, as in Ivan Pavlov's experiments where dogs salivated at the sound of the bell heralding feeding time. On the same continuum, Holmes and Gardener (2008) say that the operant version of behaviourism predicts that with sufficient repetition of an experience (also echoed in Bandura's 1977 self-efficacy theory) specific behaviours can be taught by reinforcing desired behaviours. In the behaviourist perspective, learning is more physical. Digital tools provide stimuli to which learners must respond. Hirumi (2002) and Huang and Liaw (2004) state that cognitivists view knowledge as a product of accurate internalisation and reconstruction of an external reality. Constructivism combines with cognitivism to explore how the interaction of teachers in the digital space helps to create or develop initiatives on the teaching of digital literacy in English in resource-constrained secondary schools. According to Papert (1988) Constructivism is a process by which knowledge is built by learners, thereby implying mental activity involving combining of old structures and new structures to form different forms of knowledge, which is used to solve contextual problems – particularly in resource-constrained environments. While cognitivists and constructivists attune to mentally-based processes, human adjustments to new and adverse conditions require both emotional intelligence and mental cooperation, all destined to propagate resilience for performance accomplishment. So, the process of learning and using digital literacy requires of teachers to adapt to new settings and develop skills (resilience) for them to be able to perform their tasks.

In this study the theories inform English teachers on strategies used to teach psychomotor skills and how cognition takes place during the design and execution of digital literacy lessons. The process of adjusting by incorporating psychological behaviourist and cognitive aspects is part of adaptive resilience because it involves modifications in

teaching methods, approaches and strategies. The key point is that digital literacy is relatively new to the curriculum in the South African context. For this study, teachers use the psychology of resilience to adjust to the teaching of digital literacy in English in township secondary schools. In the context of the study, behaviourism, cognitivism and constructivism inform teachers on how to make pedagogic choices and preparation of digitally-based learner tasks that provide useful and relevant experiences.

In addition to the theoretical guidelines to the foundations of the curriculum, the hidden curriculum in this study significantly requires attention because of the role of the out-of-school digital literacy practices. According to Skelton (1997) the functionalist perspective on the hidden curriculum focused on the role of schools in maintaining social order and stability. Schools advance norms transmitted through learning programmes and socialisation. Norms include independence, achievement, universalism and specificity. In support of the functionalist perspective, the liberal perspective recognises the significance of the hidden curriculum as it considers the taken-for-granted assumptions and practices of school life (Bowles and Gintis 2002). These include discipline, mixed ability (digital competence skills), indirect streaming (imbedded in othering) and border crossing which refers to conceptual shifting when it is linguistically possible between teachers and learners whose cultural basis have more to share. Socialisation on social media which involves learning, play, entertainment and other social literacy are key elements of the teachers' strategies. This study gives credit to other supporting theoretical guidelines emanating from Deleuze and Guattari (1988)'s notions and narrative forms of educational otherness or schooling, cognitive skill and personality as determinants of economic success and intergenerational perpetuation of inequality as stated by Bowles and Gintis (2002) on schooling in capitalist America. To avoid a congestion of theories in the study, this discussion simply borrows the notions and focuses on the strategies and resilience of teachers in adapting to technological developments.

The theories provide guidelines on how digital literacy is used in teaching English and influence how knowledge is constructed on digital platforms. In cases of adverse contextual factors, teachers adapt and adjust to the settings for the teaching of digital literacy. For this study, teachers in township secondary schools make adjustments and create English learning opportunities such as through using chat groups, PowerPoint presentations and web links for learners to use as information sources and guidelines for

learning. The next section focuses on how township English teachers make adjustments on the teaching of digital literacy in English.

2.6 Township English teachers' resilience on digital literacy

The term “resilience” began to be used within fields such as psychology and psychiatry during the 1970s to describe the positive development of children considered to be “at risk due to experiences such as abuse, trauma and divorce” (Mansfield, Beltman, Price & McConney 2012:359). The inclusion of resilience in this study is to demonstrate teacher initiatives as adaptation based on self-efficacy to teaching and using of digital literacy in English language teaching and learning. In addition to adaptation based on self-efficacy, Ungar (2008) says that the development of resilience involves a complex interplay between individuals and the environment resulting in successful adaptation despite threatening circumstances. Ferreira (2013) defines resilience as a process development which occurs over time involving the ability to make adjustments to varied situations and increase competence in the face of adverse conditions. In support of resilience of secondary school teachers, Ferreira (2013:75) identifies three forms of resilience:

- capacity to absorb stress forces through resistance or adaptation
- maintain certain basic functions and structures during a high risk event
- ability to recover from an event or ‘bounce back’.

This study combines the first two options for teachers who need to absorb stress in teaching and learning in resource-constrained environments, while adapting to the new situations and maintaining basic teaching functions.

Castro, Kelly and Shih (2010) posit that resilience refers to specific strategies that individuals employ when they experience adverse situations. Tait (2008) says that resilience is a mode of interaction with events in the environment that is activated and nurtured in times of stress. Ungar (2008) corroborates that evidence of resilience is inherent in the individual's responses to challenging situations. English teachers in township secondary schools face challenges of heavy workloads, classroom management, a lack of resources and a lack of support by stake holders. Bush, Joubert, Kiggundu & Van Rooyen (2009) say that the inclusion of digital tools for digital literacy is an additional responsibility that is understood as either adversity or job enrichment.

Hague and Payton (2010) say that teachers' adverse conditions or challenges are the availability of adequate time to identify and learn compatible, relevant English language software, scheduling access to digital tools, and adequate time for professional development programmes and activities. These challenges are familiar to most teachers exploring digital technology in most regions of the world. The above factors can discourage teachers from using technology in English (Gallardo-Echenique et al. 2015). However, teachers with positive pedagogical and more learner-centred beliefs tend to engage more in constructive technology-integrated activities and often successfully complete them because of their self-efficacy. Self-efficacy in digital literacy teaching involves the intellectual will power of teachers and their intrinsic motivation to cascade to the next level upon successful accomplishment of tasks. The whole process of constructive technology integration is in a gamut of the human social literacy practice domain underpinned by social cognitive learning theories.

Social cognitive theory presupposes that individuals do not simply respond to environmental influences, but rather actively seek and interpret information (Nevid 2009). In addition to the above view, Bandura (1999:169) posits that "individuals function as contributors to their personal motivation, behaviour and development within a network of reciprocally interacting influences". While the social cognitive theory covers areas such as moral judgement and physiological arousal, this study mainly drew from self-efficacy and beliefs regarding one's capabilities of successful completion of goals. Furthermore, Bandura (1984) states that learner' perceptions about their abilities influence how they behave, their thought patterns and their emotional reactions in difficult situations. For example, an individual with high self-efficacy is confident and motivated to work toward a learning goal while a learner with low self-efficacy is not motivated and finds working toward a particular goal very difficult (Gallardo-Echenique et al. 2015).

The guiding principle of the self-efficacy theory is the strong pedagogical conviction that people (teachers) are self-organising, proactive, self-regulating and self-reflecting (Bandura 1977). In view of the above assertion, the inclusion of digital tools and digital literacy in English syllabus pedagogy creates an environment which requires of teachers to adapt through emotional, intellectual, mental and several other related adjustments. By so doing, teachers learn to use computers, cell phones and other mobile devices when they observe other teachers using them or when they incorporate them in their lessons and teaching. The process involves each teachers' self-evaluation of their behaviour

against the performance of others thereby providing satisfaction and motivation when individuals achieve goals that they value (Zimmerman & Schunk 2001). In view of the above, learning to teach with digital tools depends on the teacher's motivation to achieve goals, and some level of digital competence to accomplish their tasks for the purpose of an educational outcome. A re-evaluation of the learner's learning process raises the standard of learning and achievement if they progress and accomplish their tasks. In this context, efficacy can be understood as teachers' judgements about their capability to perform English academic tasks. Self-efficacy related to educational learning tasks increases the effort and persistence towards challenging activities, thus increasing the possibility of completing them (Axtell & Parker 2003).

According to Zimmerman and Schunk (2001) teachers evaluate and re-evaluate their actions in English language teaching and learning, their sources of information and the materials that they use in order to improve their performance. The evaluation process creates an opportunity for them to scaffold to the next step, and achievement motivates them to work harder and much more creatively. It requires a strong sense of efficacy to remain task-oriented in the face of adverse pressing, situational classroom demands and failures that have social repercussions. Gibson and Dembo (1984:123) posit that "teachers who have a high sense of instructional efficacy devote more classroom time to academic learning, provide students who have difficulty in learning with the help they need to succeed and praise them for accomplishments". Gallardo-Echenique et al. (2015) say that the ability to accomplish desired goals and outcomes motivates teachers to work constructively towards the next set of skills to attain digital competence. The 21st century digital literacy and teachers' professional development processes have been characterised by ever changing sets of skills requiring constant migration from one systematic function to another, depending on the needs of society and industrial technological development (Crystal 2011). For this study, self-efficacy is important in understanding teacher adaptation to digital literacy in English. Psychological traits are important in teacher professional development and the transition to multimodal literacies. This case study sought to cover the knowledge gap by exploring the strategies and approaches used by township English teachers on how they teach digital literacy in English.

The migration towards multimodal literacies, which is often imbedded in digital literacy in classroom practices, is determined by the teachers' digital literacy proficiency

(Valdes 2004, Warschaur 2008, Tan & McWilliams 2009). Even where technological hardware is available, schools have proven to under-utilise the creative potential of such digital technologies for purposes of teaching and learning English as a second language (Ware 2008). In South African township secondary schools, limited computer hardware resources and a lack of digital skills by teachers on technology integration (adverse conditions for teaching English with technology for the digital generation) present major challenges. A lack of technological resource materials and pedagogic skills affect the effective teaching of English for proficiency. Creative potential of digital technologies for this study provides insights for teachers on how they can use digital literacy in the teaching of English.

2.7 Adaptive features of township teacher resilience in English language teaching in the digital age

Teacher resilience has emerged as a critically important field of academic research over the years – particularly in countries where high rates of teacher population attrition have been recorded in the education sector. This resilience of teachers in education is attributed to a strong sense of competence, efficacy and accomplishment as well as use of coping strategies in those contexts. Stanley (2013) says that ESL teachers across the world have been dealing with challenges related to teaching second language speakers, which provide them with experience of adapting to adverse situations. The European experiences indicate that teacher adaptation to digital literacy includes establishing online connections with their learners (Stanley 2013). Pahomov (2014:47) posits that

teachers have online connections and allow them to share information and modes of lesson delivery in language teaching. Online communities simulate real life situations and provide continuous learning opportunities even when classes break at the end of the day or for weekends.

It is critical for learners and teachers in such learning communities to have viable connections and to capitalise on any opportunity available to them. The online network provides learners with opportunities to interact with subject experts and get instant rewards and motivation when they get solutions to their academic problems. Pahomov (2014) contends that, as a human learning requirement, motivation is critical in self-efficacy to support the digital literacy programme and teachers' commitment to it. In summary, teachers' commitment, online adaptation and resilience, a strong sense of self-efficacy and coping strategies are critical features of resilience in digital literacy.

A global perspective on the teaching of digital literacy is reviewed in the next section.

2.8 A global perspective on teaching of digital literacy

Digital literacy is a branch in the academic literacy domain (Roswell, Kosnik & Beck 2008) and therefore this study finds it imperative to review literacy in the global context. Understanding literacy and its global trends, regional patterns and school programme positions the study and contextualises the exploration of digital literacy in South Africa. Literacy in the traditional view is understood as the ability to read and write (Reid 2016).

Literacy has been developing over the years and is always dictated by technological developments and innovation (Janks 2010). Readers and writers will always interpret texts differently depending on their contexts and literacy orientation, values and beliefs. Development of literacy has led to types of literacy which include digital literacy, information literacy, environmental literacy, health literacy, visual literacy, academic literacy and media literacy. Digital literacy falls under the family of literacies. Digital literacy has only gained momentum in recent years because of improved access to digital tools, connectivity and availability of networks. A number of studies have attempted to define digital literacy. According to Belshaw (2011) the focus on digital literacy was propagated by the publication of Paul Gilster's seminal *Digital literacy* in 1997. However, different countries deal with digital literacy in different ways. Singapore, an Asian country with English as one of its official languages, has invested much in ICT and education while Norway is an international pioneer with digital literacy embedded in its curriculum (Belshaw 2011). Hague and Payton (2010) indicate that digital literacy provides learners with an opportunity to use digital technologies when it is appropriate and useful. This means encouraging the sorts of active, creative and critical uses of digital technologies, which can develop digital literacy. So, digital literacy may carry different meanings depending on contexts and design of the curriculum as informed by its aims and objectives.

The United Kingdom approach to digital literacy is all encompassing as it covered organisations such as Office of Communications (Ofcom), British Broadcasting Corporation (BBC), United Kingdom Film Council (UKFC) resulting in the formation of Media Literacy Task Force (MLTF) (UK Film Council 2004). This was the United

Kingdom's strategy of integrating the use of technology in both industry and education. Meanwhile, organisations such as Future Lab have continued to promote and develop material for digital literacy in schools (Hague & Payton 2010). In their promotion of digital literacy, teachers are using the internet for academic research, publication of research outputs, connecting to learners and doing online activities. Future Lab uses videos, YouTube content, Facebook, twitter and other social media for both communication and out-of-school English learning exercises (Roswell et al. 2008). The above-mentioned practices are human social digital literacy practices which support teachers in English learning and creating texts that work as information repositories for future generations.

In the European space, Norway has been a champion in technology integration and digital literacy for the past decade (Belshaw 2011). To substantiate their practices, the Norwegian Ministry of Modernisation (2009:12) defines digital skills as

the ability to exploit the opportunities offered by ICT, and use them critically and innovatively in education and work. Digital skills also include the ability to be critical to sources and assess content. Use of digital tools is a skill the individual must acquire, maintain and continually develop, if he or she is to be a digitally skilled and critical citizen.

The position of the ministry as stated above clearly indicates the inclusion of digital literacy in the ICT opportunities in education and the workplace environment. However, the Norwegian government's policy on digital literacy does not make a clear distinction between digital literacy and digital competence, but states that digital competence means the basic skills of operating digital tools (a behaviouristic stimulus-response phenomenon) while digital literacy is equated to media literacy (cognitive approach propagating human critical thinking using computers as artificial intelligence terminals) (Erstad 2008). The critical focus of the digital initiative is on promoting digital literacy for citizens to be able to access information on health and the economy of the country (Belshaw 2011). This study reviews the Norwegian experience in order to draw models on strategic implementation and initiatives from their experiences. The Norwegian experiences help teachers and education planners in Africa to understand and develop initiatives on how digital tools can be used in resource-constrained township secondary schools.

Belshaw (2011) states that the development of digital literacy and the subsequent campaign in Asia saw Singapore's participation through adoption and teaching of the

International Computer Driving License (ICDL) in 2010. One of the aims was to increase foreign investment and participation in the global economy. The popularised terminology in Singapore was “new literacies”, which included digital literacy and media literacy. The main aim was to develop high competence skills for critical thinking and proficiency in communication for business purposes and active participation in the knowledge economy (Singapore Ministry of Education 2008). According to Belshaw (2011) Singapore has a strong education background as indicated in the report by the Organisation for Economic Cooperation and Development (OECD) in the year 2000. It indicates that their students are grade driven to ensure entrance into good universities. The quest for grades and quality education has driven the dominance of new literacies, which includes digital literacy, in Singapore (Tan 1998). While these initiatives on the global continuum are critically important, it is important to explore the initiatives and strategies used in South Africa considering the resource constraints that characterise some township environments.

Hague and Payton (2014) indicate that technological development leading to the teaching and use of digital literacy across the globe has challenged teachers and education planners to include digital literacy in teaching. The New London Group (1996) is an international project promoting multiliteracies by encouraging the use of multimedia in the teaching of subjects such as English. The British Council and the Punjab Education and English Language Initiative (PEEIL) established in 2013 aims at teacher professional development which includes pedagogics in digital literacy at secondary level. The organisation coordinates training programmes on the teaching and use of digital literacy in the teaching of English (British Council Report 2015).

However, in Africa, most countries face the challenge of acquiring digital equipment and of the skills gap between teachers and learners for the effective teaching and use of digital literacy (Mafenya 2013, Rwodzi 2014). For Africa, it is common to find schools with obsolete donated computer technology or skilled computer teachers who do not have any computers to use for teaching, leaning and research. In other cases, computers are used as toys for use during the so-called free periods or substituting teachers who are not on duty. The implication for this study is on how English teachers in township settings take initiatives on the teaching of digital literacy in the teaching of English in South African. Considering contextual factors, the study was undertaken to fill the pedagogical knowledge gap in the teaching of digital literacy.

2.9 Digital literacy practices on the African continent

The three dominant economies in Africa, Egypt, South Africa and Nigeria, are key players in digital technology development. In view of the technological development on the African continent, Bali (2016) says that digital literacy in Egypt is not only about technical proficiency, but also about the issues, norms and habits regarding technologies used for a particular purpose. The use of technology in education and society embraces elements of digital literacy namely critical thinking, creativity and communication (Bali 2016). So, in terms of policy, most African countries have inclusive policies on the teaching of ICT and digital literacy in schools as evidenced by their participation in the global cyber terrain. The implication of the above views is that the education systems in Africa encourage the teaching of digital literacy although the use of cell phones for teaching and learning is not common (Mafenya 2013). In view of the policies which encourage the teaching of digital literacy, cell phones are infrequently used for teaching in most schools due to disciplinary issues of learners and their access to harmful content.

While other continents and societies view Africa as a dark continent, connectivity, networking and the use of the internet is on the rise, particularly as a result of undersea cables such as the East African Submarine Cable System (EASSY) submerged in the Indian Ocean in 2011 (Ledgard 2011). The subsequent increase in connectivity in Africa has also challenged educationists and governments to connect their institutions for business and research. As mentioned in chapter 1, Africa's participation on social media is currently and mostly an out-of-school practice, although the internet is widely used for research and teaching at most universities and colleges in Africa. Depending on their contexts, many secondary schools in cities also have access to connected and networked computers. However, the access and availability of digital tools in township secondary schools is inadequate. In Southern Africa there is a lack of awareness of digital literacy in schools, and in cases where there is awareness, it is not formally taught or examined. This brings us to the key question of this study: How do teachers teach digital literacy in English in township secondary schools? This study therefore attempts to provide insights on how digital literacy is taught by gathering data and analysing them in order to answer the key question. It digs deeper into the pedagogic strategies used by teachers and explores the teachers' out-of-school digital literacy practices that are linked to the teaching of English as a second language.

2.10 Levels of digital literacy development in the South African English syllabus

Due to economic disparities and socio-historic imbalances inherited from the apartheid system, the digital terrain in South Africa is very diverse. Schools located in township areas and informal settlements are characterised by a lack of infrastructure such as electricity, computers, and adequate furniture for effective teaching (Ebersöhn 2017). As mentioned in chapter 1, the teacher-learner ratio for township environments stands at 1:60 on average and digital technology provision services from Gauteng Online (provincial government initiative) provides 25 personal computer workstations for each school, making it very difficult for learners in overcrowded classes to access them. This brings the learner-computer ratio to 1:2 or 1:3 (Mafenya 2013). In addition to the ratios, technology and digital skills across subjects, and particularly in English language teaching, are not examinable except for Computer Applications Technology (CAT) (DBE 2011). As digital literacy in other subjects cannot be examined, teachers do not pay much attention to digital literacy in some schools.

My observations as a university lecturer and active researcher indicates that most tertiary institutions in Gauteng offer first-year courses in computer applications technology or End-user Computing as a bridging course/subject to develop digital competence for digital literacy at university level. In other instances, various departments at universities offer foundation subjects which include digital tasks to first-year students as induction programmes for academic literacy (Biljon, Traxler, Van der Merwe & Van Heerden 2015). For example, Key Train, a digital assessment and benchmarking program for engineering students, and Electronic Word Power (EWP) are examples of programs designed to provide skills, attitudes and knowledge on digital literacy at university level in South Africa. Such programs bridge the technology gap between secondary level education and tertiary education considering that the learners are from different academic environments.

Learners entering South African universities need digital skills and English language proficiency skills in order to perform well. Mafenya (2013) says that students who do not manage to meet the requirements at tertiary or other forms of training have limited exposure to digital literacy, and are therefore deprived of proficient participation in digital literacy development. This deprivation is likely to exclude them from advanced skills and

access to information sources and digital landscape privileges and affordances (Mumtaz 2000). The implication thus is that teachers in resource-constrained secondary schools struggle to use digital technology for effective teaching of digital literacy in English. Reid (2016) emphasises the importance of digital literacy and multiliterate skills for South African teachers graduating from universities in order to support the development of digital literacy teaching in secondary schools. My study helps to provide information on the pedagogic initiatives by township English teachers on how digital literacy is taught in secondary schools.

2.11 Digital tools in support of English language teaching and learning

Teachers need to integrate technology in the teaching of language and all other subjects (DBE 2011). This is important for the fact that the teaching of digital literacy prepares learners for the world of work in the digitised generation. My observations reveal that teachers lack skills and experience in integrating digital technology and therefore need to consult experts to expedite the process of teaching digital literacy in English. The initiatives form part of teachers' resilience as they need to adjust to new approaches incorporating digital literacy in English language teaching. The rationale for teaching digital literacy fulfils the educational aims of South Africa departments of education by providing skills, inclusivity, and environmental and social justice (DBE 2011). According to item 1.3(d) under general aims in the CAPS document (DBE 2011:5) the curriculum seeks to help learners to be able to

- (i) identify and solve problems and make decisions using creative and critical thinking, use science and technology effectively and critically showing responsibility towards the environment and the health of others, collect, analyse, organise and critically evaluate information.

The core values cited above clearly support the teaching of digital literacy in English language as teachers should seek to impart skills on creativity, critical thinking and responsible use of science and technology (Giampapa 2010). Digital literacy proficiency helps learners to acquire knowledge and skills that will help them identify solution to problems in life by navigating cyberspace. The knowledge and skills will also help learners link with global communities and share experiences (Taylor, Bernhard, Garg & Cummins 2008).

The CAPS document for English Home Language Grade 10–12 (DBE 2011:23) states that teachers should include multimedia texts/visual texts and digital tools in developing class tasks and activities in the teaching of English Home Language. Social media, multimodal texts, Facebook, web pages, internet sites, blogs, and YouTube videos and movies are included as teaching and learning resources. The prescribed materials clearly indicate and justify the teaching of digital literacy in English language at secondary level. However, this directive does not include possible strategies that teachers may use. According to Biljon et al. (2015) South African teachers are nervously integrating digital tools in English teaching. The nervous condition is a result of ill-preparedness as most teachers were not prepared or professionally developed to use digital tools in English teaching. To celebrate the resilience of such teachers, this study explores teacher initiatives on the teaching of digital literacy in English.

The introduction of an inclusive policy on technology integration in secondary schools automatically requires of teachers to adjust their pedagogical strategies and approaches in language teaching in a bid to accommodate the teaching of digital literacy. However, the teaching of digital literacy in secondary schools in South Africa has been pushed to teachers through policy without them being properly trained in preparation for teaching digital literacy (Biljon et al. 2015). Furthermore, Prensky's (2001) claims that the young generation has not only changed incrementally, but that their learning strategies have changed due to changes in their brain structure, makes this study timeous. Teachers in secondary schools have been left to take pedagogic initiatives that mitigate the skills gap and are faced with the challenge of taking pedagogic initiatives and developing strategies for teaching digital literacy in English as they endeavour to meet the curriculum requirements. Therefore, digital tools and digital literacy play an important role in both learners' and teachers' lives.

Giampapa (2010) contends that the digital space through multiliteracies in multilingual societies create learning opportunities and eliminates challenges of resources such as access to libraries in schools and communities. This challenge is eliminated if learners are connected to online sources which allow them access to their teachers through a virtual presence (Pahomov 2014). Digital tools and their connection provide instant rewards when students get feedback from their resource persons. Barriers such as the ability to search for books in congested libraries or access to recent publications is overcome when digital connection provides information instantly (Giampapa 2010).

Online connection is convenient for ease of access and reduces physical distances for learners to travel to libraries which may be under-resourced. English teachers should engage in the editing, evaluation and analysis of information sources for the learners in digital literacy contexts and establish links with each learning programme (Reid 2016). The purpose of this study is to explore how digital literacy is taught in secondary schools and to understand pedagogic initiatives that are taken by teachers to support learners in learning English as a second language.

This discussion proceeds to what is involved in new literacies for teachers where digital literacy plays a fundamental role.

2.12 New literacies for township secondary school English teachers

Technological development has led to the development of new literacies the world over. Luke and Freebody (1999) contend that multiliterate requirements for reading effectively in a multimodal world can be understood as being able to decode written text, compose meaningful texts, use texts functionally, analyse critically and make meaning even from visual content. Paul (2006) posits that the notion of multiple literacies in education represents a paradigm shift from the traditional notion of literacy. Multimodality makes meaning in literacy practices by combining a number of modes of communication such as verbal, visual, aural, spatial, and gestural with instant transmission to consumers (Bearne 2003, Walsh 2006). Reid (2016) says that international, national and regional security organisations track cyber-crime using finger-printing technology. The concept is developed from traditional and autonomous literacy as it integrates digital technology to perform advanced tasks more efficiently. In view of literacy development, other types include functional literacy, biliteracy, multicultural literacy, information literacy, visual literacy, cultural literacy, scientific literacy, new media literacy, global literacy, computer literacy and digital literacy. This study focuses on examining how digital literacy is taught within the framework of new literacies for teachers in education. It explores teacher initiatives on digital literacy by English secondary teachers in township schools considering technological development and emergence of social media in out-of-school literacy practices.

With the advent and continuing development of predominant social models of literacy, there is an emerging view that literacy is an integral part of socio-cultural lives of individuals and communities (Wang 2008). In a social perspective, digital literacy is viewed as breaking boundaries in literacies, thus merging the school learning and teaching environment, work contexts and social settings into a single continuous learning and entertaining process. In support of the merged learning platform, Belshaw (2011) says that digital literacy has not only become a practice but a socio-cultural phenomenon. It is the merging of school learning and social settings that motivates researchers to understand teachers' initiatives on the teaching of digital literacy in English.

The traditional view to literacy is associated with the systematic mastery of grammatical rules for effective literacy while the socio-cultural view identifies literacy as associated with domains and recognises it as a set of practices in social contexts. Reid (2016) identifies four domains: the personal domain, the academic domain, the school domain and the digital domain. In view of the domains, the most important aspect is the set of skills and the pathways developed in pursuit or search for meaning. Multiple modes for making meaning such as pictures, gestures, sounds, as well as the construction of identities through the use of electronic texts, form the wider continuum of literacy practices. Grammatical competence in literacy is no longer the only gateway to effective literacy. In the digital age, information can be presented in different modes for different readers. The readers could be in social and political contexts (Reid 2016). Paul (2006) says that multiple literacies would therefore refer to diverse sets of practices and semiotic systems to acquire, construct, communicate and question knowledge as well as to create, analyse and transform relationships among people and between people and institutions. On the digital literacy terrain, new literacies are a product of literacy development in multi-dimensional ways commanded by technological development and information explosion (Jones 2006, Reid 2016). In this study, an understanding of the literacy domains and an awareness of the conventions in new literacies helps to discover how teachers make adaptive adjustments in the teaching of English in the context of digital literacy. As a result, aspects from the socio-cultural model in literacy are used to explore how teachers and learners use digital literacy in English pedagogy. The socio-cultural model in the digital landscape identifies four roles of the reader in literacy, which

are also applicable to digital literacy practices. Reid (2016) mentions and summarises the following roles in the social practices of literacy:

Code breaking – a social practice in which the reader as an active participant decodes and encodes texts. The reader at this stage focuses on sounds in words. The process of code breaking helps to activate grammatical conventions, concepts of digital texts, phonological knowledge, alphabetical knowledge and knowledge of letter-sound relationships. The reader develops skills of word recognition and phonological discrimination. The reading strategies help in predicting, sampling, checking and confirming as well as decoding skills(Reid 2016:21).

Text participant – is an interactive literacy social practice of meaning making from different texts in personal, academic and research domain literacies. In this literacy practice, knowledge on intertextuality and organisation of texts are activated. The process helps in developing skills of text interpretation, text analysis, linking events, comparing own experiences and the text, composing and understanding texts from particular cultures(Reid 2016:21).

Text user – readers engage as users. Within this practice, they activate knowledge about the text genre, text structure and social purposes. They get interactive skills on participation in reading events, selecting texts to suit their purposes and structuring texts according to purpose and audience(Reid 2016:21).

Text analyst – readers engage in social practice of understanding analysis and the underlying assumptions in the text and then position themselves as readers. Opinions and point of view help to construct ideological meanings. In the process they develop critical analysis skills, interrogating texts, analysis of how language is used, understanding roles, positions and power structures in texts and society (Reid 2016:21).

The four broad roles of the reader stated above often position the reader in the reading process depending on their purpose. Common forms of reading oscillate around these four roles, irrespective of the text mode. English teachers need an awareness of these roles in order to be able to assist learners by building bridges in cases where navigating from one role to another poses a challenge. The learning bridges are embedded in pedagogical practices and strategies used by the teachers based on their experience and self-efficacy. The roles of the reader in this study provide insights into how digital

literacy provides pathways, multimodality and literacy vectors in digital texts. This study therefore explores the different initiatives taken by teachers to support learner development of digital literacy skills for use in English and other subjects in the curriculum.

Janks (2010) notes that the art of writing progressed from writing on papyrus and parchment, using quills, pencils, paper, pens, typewriters and computers. In Africa rock paintings are a permanent record of earlier forms of writing (Anati 2004). In order to survive the Khoisan in Southern Africa need to be able to read and make meaning of animal footprints as part of their environmental literacy. The Khoisan can detect the direction of movement of animals, estimate the time that the movement took place, estimate the relative speed of the animals, and determine the identity of the animal. This social and environmental literacy skill is practiced by analysing footprints through a critical reading process. The meaning-making process can be done from footprints on the ground and therefore the ground is a typical example of a reading and writing surface as we would do with our papers, computer screens and road signs (Anati 2004).

In contrast to the digital age, African traditional education in the 20th century was characterised by inscriptions on ground surfaces, markings on trees and rock surfaces, leaves and erected human structures such as huts, graves and other forms of artefacts (Rwodzi 2014). Technological development has revolutionised the communication landscape thereby enabling instant production and transmission of verbal, visual and multimodal texts. In support of digital technology development, Belshaw (2011) says that the development of digital literacy is linked to invention and development of computers and technology in general. The next section reviews digital literacy in relation to English syllabus in the South Africa context.

2.13 Digital literacy as innovation in the English syllabus

Digitalisation and globalisation are movements of the century encouraging students' curiosity and critical framing for creativity in teaching and learning. Jones-Kavalier and Flannigan (2006) state that digital literacy represents a person's ability to effectively perform tasks in a digital environment. The word "digital" refers to information

represented in numeric form, primarily through computers. Ng (2012) says that digital literacy refers to the multiplicity of literacies associated with the use of digital technologies. It embraces technical, cognitive and social-emotional perspectives of learning with digital technologies, both online and offline (Ng 2012). Digital literacy is developmental, and progressively builds on foundational and achieved skills and knowledge. Janks (2010) defines literacy as an ability to read and interpret information in different formats and for different purposes, especially when presented via computers. For digital literacy purposes, literacy should aim at reproducing data and images through digital manipulation, and evaluate and apply new knowledge gained from the digital space. Aviram and Eshet-Alkalai (2006) contend that digital literacy is a combination of technical and procedural, emotional and cognitive social skills for leisure, work and communication. Eshet-Alkalai and Amichai-Hamburger (2004:421) state that

digital literacy consists of five skills, namely photo-visual skills (reading instructions from graphical displays), reproduction skills (utilising digital reproduction to create new, meaningful materials from existing ones), branching skills (constructing knowledge from non-linear, hyper textual navigation), information skills (evaluating the quality and validity of information) and socio-emotional skills (understanding the rules that prevail in cyberspace and applying this understanding in online cyberspace communication). Real-time thinking is the final skill (the ability to process and evaluate large volumes of information in real time).

Traditional literacy has links with digital literacy in that the latter is a product of the combination of the old styles. Rocha (2016) says that traditionally literacy is viewed as a systematic mastery of a number of sub-skills in a specific order (probably learnt in school in a formal way), the ability to identify individual language sounds and letter-sound relationships, blending to form words, word attack skills, recognising and attaching meaning to it. Technology has the ability to combine and merge to a multimodal format in the digital space (Reid 2016). While the traditional writing surfaces were helpful during their time, the digital surface presents more advantages in terms of proficiency and ability to allow learners to make meaning even in the context of poor writing facilities (Bearne 2003, Wash 2006). According to Rocha (2016) technology takes advantage of combining sound and graphics and creates diverse reading pathways. This study does not focus on a comparison of the developmental and progressive skills gap, but on how digital literacy is taught in township secondary schools.

Luke (2000) states that the process of transforming from traditional literacy practices to digital literacy practices clearly indicates that new literacy practices such as digital literacy are important. In view of the above assertion, the digital generation understands literacy as a social practice coined in a genre of technology. For the digital generation, participation on the global knowledge economy depends on proficiency in digital literacy. In terms of development, Prensky (2001) says that the global digital culture has divided the world population into digital natives, digital immigrants and digital voyeurs, and therefore debate on inclusion in the curriculum is a non-event. Digital literacy creates learning opportunities and makes learning a faster and more efficient process than other traditional literacy practices. The 21st century is understood as the age of information explosion which requires critical and digital literacy skills. Literacy pedagogy should include looking at what learners are doing with reading and writing in different domains and bringing them into the classroom where they can analyse what is happening with literacy, language and identity in informal spaces (Moje, McIntosh, Ciechanowski, Kramer, Ellis, Carillo & Collazo 2004, Hicks & Turner 2013). Digital literacy social practices such as texting, posting updates on Facebook, blogging, tweeting and podcasting are platforms for socialisation and knowledge construction in English and other learning areas across the curriculum.

In educational and social settings, learners construct their identities through texts in digital spaces. Furthermore, Jones (2006) contends that in multilingual situations, code-switching and common code of communication by electronic means is developed to bypass barriers of bilingualism. For example, social media platforms provide out-of-school digital literacy practices, which people use to construct their identities through choices of what is interesting to them. In the social media participation process Crystal (2011) states that “internet linguistics” is activated because of the presence of vocabulary and new forms of language representations. For example, learners in school use lol, txt, sms in digital communication. This is a new writing convention, which also combines with images (a heart to show where love is involved) and other forms of information representation such as pictures, videos, logograms, abbreviations, emoticons and diagrams (Crystal 2011). In the context of the South African English syllabus, communicative ability is fundamental and more critical than attention to the basic structures of the language. It is critical to mention that writing style and format on social

networks are not accepted in formal writings at universities and secondary schools in South Africa, therefore this study does not pursue cyber linguistics for now.

Digital literacy incorporates the acquisition and development of digital skills. In attempting to unpack the variety of skills, Jenkins (2006), Bell (2011), Hicks and Turner (2013) indicate that multitasking involves the ability to pay attention to more than one focus and shifting between processes of meaning making. Multitasking is also part of collective intelligence which includes a pool of knowledge and compares notes with others towards a common goal. Transmedia navigation practices are the ability to follow the flow of stories and information across multiple modalities while distributed cognition refers to the ability to interact meaningfully with tools that expand mental capacities. These are some of the critical digital literacy skills. These attitudes and other additional skills are available in South Africa's young generation, but the focus of this exploration is on how they have been incorporated into the teaching and learning of school subjects such as English. The next section reviews the key components of digital literacy.

2.14 Key components in digital literacy for township secondary schools

The notion of literacy as a social practice has been emphasised by the work of new literacy studies (Cope & Kalantzis 2009). These studies include digital literacy with its constitutive elements particularly in the teaching of languages. Digital literacy is a broad and wide-ranging set of resources and practices which allow students to participate in social, cultural and economic relations in a digital landscape (Hicks & Turner 2013). The inclusion of key components for digital literacy is to develop a deep understanding of the concept and review their role in the study.

Hague and Payton (2010:21) say that

developing digital literacy means giving students the opportunity to use digital technologies when it is appropriate and useful and it means encouraging the sorts of active, creative and critical uses of digital technologies which can develop digital literacy. Developing digital literacy is about developing skills, knowledge and understanding in all of the components and in no particular order.

The digital literacy components include functional skills, critical thinking, e-safety, creativity (for problem-solving), effective communication, cultural and social understanding, collaboration and the ability to find and select useful information to their

socio-cultural and economic needs. The process is a life-long learning programme. It largely benefits active participants either as consumers of knowledge or architects on knowledge construction sites (cognitive function). For L2 English language learners in township settings, critical thinking skills, collaboration and networking provide a platform to exchange ideas across international physical boundaries where English is used as a medium of instruction in schools or for communication in business and socialisation.

Digital literacy activities create apprenticeship opportunities that can benefit second language speakers of English. Thorne, Black and Sykes (2009:815) posit that

in many new media contexts, from literary gestures in fan fiction communities to language mediated coordination among players in an online game, specific language competencies develop in interaction within particular genres and routine interactional scenarios such as gaming contexts.

Digital literacy as a social practice converges cultures through collaborative authorship and digitally connected and networked knowledge communities in a participatory culture. In the digital age, practising teachers must be aware that single text authorship is now an option and that the learning classroom extends beyond the visible walls through connection to digital resources and learning partners (Lotherington & Jensen 2011). In the South African context, the teaching regiment is characterised by young and old members whose beliefs on digital literacy vary. Digital immigrants are struggling to integrate technology in their teaching of subjects such as English, because they believe in chalk and talk and they are mostly content authorities instructing learners on how to complete tasks, as opposed to integration and constructivism where learners are partners in the learning process. Traditional views regard teachers as academic knowledge capitals that emit a strong frequency of authority through their attitudes and practices. Technological developmental has dissolved the myth of knowledge archives, knowledge authority and capital of teachers, as learners are regarded as partners in learning when the constructivist paradigm and connectivism are applied in teaching (Bell 2011).

Digital literacy combines a number of practices such as creativity, networking, content selection, entertainment, electronic writing, editing and evaluation, critical thinking, and problem-solving through collaboration (Hicks & Turner 2013). The above-mentioned practices combine to make digital literacy a set of human experiences and practices in

organised social settings such as schools. If literacy is understood as the relationship between the reader and text, digital literacy provides more opportunities in text construction, deconstruction, analysis and interpretation for meaning making. Creativity, networking, content selection, collaboration, and connectivism all inform critical thinking in problem-solving using digital literacy. Figure 2.2 helps to show the key components in digital literacy practices.

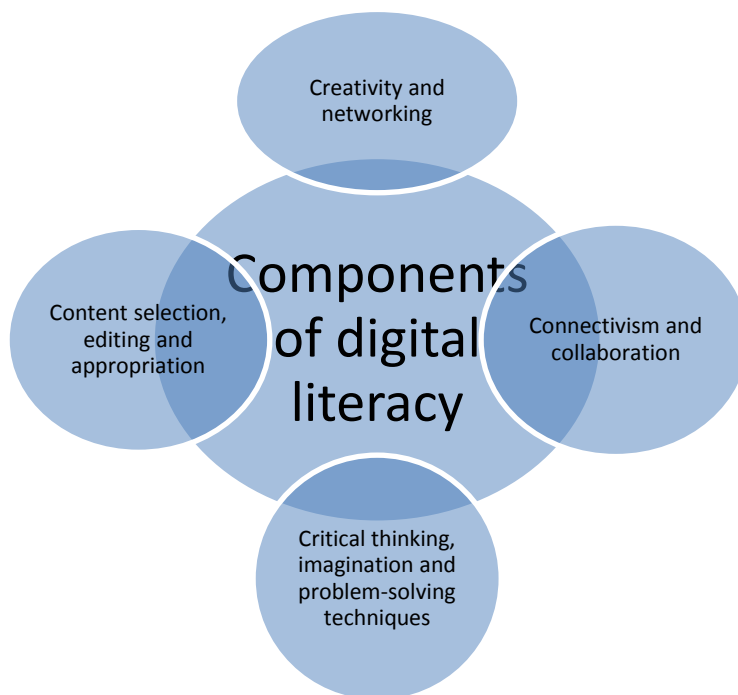


Figure 2.2 Key components in digital literacy practices

The diagram in figure 2.2 provides a synopsis of the relationship between the key components in digital literacy practices. The key components are discussed in detail in the following section.

a) Creativity in digital literacy and English language teaching

Creativity in the context of digital literacy in this study is understood as that process which involves generation of novel ideas and use of human imaginative ability to make meaningful connections between ideas, and produce creative ideas (Hague & Payton 2010). The process of knowledge production is a creative activity. According to Hague and Payton (2010) manipulation of information (pre-existing structures of

knowledge), projecting view points and re-designs of existing structures of the English language is part of creativity for digital literacy production in language pedagogy (Mumtaz 2000). Common practices in classroom situations are when the English language teacher asks students to write narrative or descriptive essays and learners imagine and connect with previous experiences and link to the requirements of the teacher's prescriptions. Learners need to modify, craft, and re-organise events within their experience in writing their essay (Bell 2011). In the writing process the ideas congregated are organised in paragraphs to form a coherent piece of work with arguments, claims, propositions and conclusions. Digital tools in this mode and pedagogy provide learners with electronic writing facilities offered by the computer program such as text layout, animations and visuals (Mumtaz 2000, Cope & Kalantzis 2009). Both teachers and learners need to be competent users of computer programs and software such as word processing, Excel (spread sheets) PowerPoint presentations and file management. Hague and Payton (2010) and Savage and McGoun (2015) posit that creativity coined in critical thinking capitalises on the ability to re-contextualise knowledge, re-purpose and include visual images, audio and text in order to represent meaning. Digital tools are therefore functioning as cognitive tools for knowledge construction in the educational space. From a cognitive standpoint, Hicks and Turner (2013) say that reading English comprehension passages and digital movie making exercises are part of cognitive constructions supporting language learners' programmes. The programmes help with digital writing exercises such as sentence construction, spelling, use of synonyms and antonyms in English. The access of online dictionaries and thesauruses is embedded in the digital literacy curriculum.

The product of creativity is seen in the form of pictures, cartoons, illustrations, websites, animations, podcasts, photo montages, blogs, music, models and graphs (Buckingham 2007, Pahomov 2014). Producing these require critical thinking as their construction calls for the participants to consider what is effective for a particular purpose, context and levels around which communication takes place. There should be a close correlation between the product, particular culture and social contexts in these social and digital practices. In working towards achieving their desired goals or end products, learners develop a broad set of critical digital literacy. Janks (2010) and Hicks and Turner (2013) connect critical digital literacy to other orientations of literacy and genres such as literacy and power, academic literacy as well as other forms of literacy.

At that level of literacy and creativity, human bodies are understood as texts (Janks, Dixon, Ferreira, Granville & Newfield 2014) that the curriculum can consider in teaching and learning of subjects such as English.

According to Taylor and Richards (1985) curriculum is a selection from culture and it is therefore critical that content knowledge and language used to transmit the knowledge is from a popular culture. English has become the language of the internet and proficiency in the use of the language has created economic and educational opportunities (Janks et al. 2014). The responsibilities of teachers in teaching digital literacy in English pedagogy is to select critical aspects of the subject that must be taught in a manner that exposes learners to a popular culture and supports the economy. Janks (2010) refers to dominant culture as the capital culture and artefacts developed under critical language awareness pedagogy, which are not politically neutral and therefore can be broken into constitutive parts. When learners are exposed to critical literacy their imaginative ability improves (cognitive development) in teaching and learning contexts. The review of the digital literacy practices in the capital culture in this study helps to provide an axiom upon which the purpose of teaching digital literacy is founded. The digital literacy practices link with the global cultural practices.

The environment in which we live is currently characterised by adverse environmental changes such as a lack of employment for young people, the changing nature of professional skills in different settings, and transmigration, resulting in a multiplicity of cultures in schools and communities which require teachers to have diverse skills and approaches in teaching (Boche 2014). Learners need digital skills and media information literacy to deal with the above challenges and other personal matters in their lives through networking and collaboration (Goddard, Goddard & Tschannen-Moran 2007). Creative ability through connecting and networking with international and regional groupings supports the desired outcomes in education. For this study, proficiency in media literacy (an advanced stage of digital literacy) helps to connect school graduates to the world of work and digitised socialisation across international boundaries.

b) Identification and selection of information sources as a digital literacy practice

The global village has been characterised by an information explosion such that individuals, communities and institutions always jostle for legitimate information. A lack of

smart players in cyberspace and the prevalence of digital crime prompt educational planners and teachers to develop a culture of responsible digital citizenship (Bell 2011). When teachers participate in online teaching programmes or Massive Open Online Courses (MOOCs), they need to develop skills in selecting relevant and appropriate content. Like the CAPS (DBE 2011) strongly supports inclusive education, Street (1995) advocates the inclusion of learners from diverse language backgrounds and literacies to avoid segregation and discrimination. However, careful planning and selection of websites, methods and strategies, software and digital tools need to be done in order to achieve the outcomes advocated in the curriculum policy statement.

Cope and Kalantzis (2009) indicate that work in multiliteracies requires that students be taught how to use and select information from all available semiotic resources for representation in order to make meaning, while at the same time combining and recombining these resources in order to create possibilities for transformation and reconstruction. Resilience is required as a result of the recombining of multiliteracies, multilingualism, multitasking and the need for instant rewards in the digital age. Teachers need to adjust and accommodate the skills required to perform their tasks. Knowledge of the subject content knowledge is not enough in modern classroom performance (Mumtaz 2000, Tsui 2003). Teachers need to package their education material in digital format as a pre-condition for delivery. Some websites and internet blogs are trial versions (for example Wikis) and the information found there is not always legitimate while other sources seek to meet political objectives outside of learner needs and interests. Teachers are responsible to select relevant articles, subject sites, reading material, specific software for subjects and content (Tsui 2003, Leask & Pachler 2013) in line with the aims and objectives of the English syllabus. In this study, borrowing ideas from the broad field of multiliteracies strengthens the digital literacy practices and shows the relationship between the two fields.

Selection of critical information sources for teaching and learning English is not only in knowledge repositories such as books and academic articles, but also lies in digital literacy skills, competence and awareness (Buckingham 2007). Teachers and learners need to develop skills in computer applications and software in order to be able to use search engines, understand cyber ethics and other digital competences and link material to English teaching methods. Selection is also critical for cognitive level requirements and various linguistic affordances. According to Kennedy and McNaught (2007:926) “a

computer-based cognitive tool is a learning tool that allows learners to articulate their thought processes, solve problems, engage in collaborative processes and critical thinking within their context". Cognitive tools allow learners to perform the role of text designer and encourage them to solve their problems by analysing, accessing, interpreting and organising their personal knowledge. In fact, digital tools are intellectual partners (Jonassen 2006).

c) Collaboration

Collaboration is a coordinated group approach to teaching. According to Riveros (2012) collaboration is part of professional learning communities aimed at improving the quality of teaching in schools. The learning process in collaborative professional learning communities involves critical dialogue, discussion, and professional interdependence on each other's ideas to create a common meaning. DuFour (2004:6) states that

the powerful collaboration that characterises professional learning communities is the systematic process in which teachers work together to analyse and improve their classroom practice. Teachers work in teams, engaging in an ongoing cycle of questions that promote deep team learning. The process in turn leads to higher levels of student achievement.

As mentioned earlier, digital literacy takes place in a social context and involves collaboration and meaning making. Reid (2016) posits that social networking is a popular out-of-school literacy practice where people construct their identities by doing interesting things with language. It is an area where talk becomes text and the negotiation of identity and relationships takes a fascinating dimension in the learner's social and school life. Learning and socialisation is easily combined through digital literacy (Cope & Kalantzis 2000; Hull & Schultz 2002; Jones 2006; Roswell, Kosnik & Beck 2008). In support of this view Reid (2016:25) says that

in out-of-school literacy practices informal, colloquial registers, codes and in-group varieties are used to mark identity and to negotiate relationships and topics. Understanding these literacy practices and the language varieties used in them is an important part of literacy education. Literacy pedagogy should include looking at what learners/students are doing with reading and writing in different domains and bringing these into the classroom, where they can analyse what is happening with literacy, language and identity in these more informal spaces. This would include literacy practices such as texting, posting updates on Facebook, blogging and tweeting.

Blogs, chat sessions, virtual classes and work on projects using online or internet linguistics, or digitalk, becomes a collaborative activity resulting in learning. These digital and online facilities create learning opportunities for teachers to capitalise on them in their planning and collaboration.

The teacher's role in digital literacy is based on awareness of the different literacies that their learners engage in. According to Bearne (2003), Walsh (2006), and Reid (2011), the reading pathways and the integration of different modes to make meaning in digital media are substantially different to print media. In print media, the reading pathways are prescribed and linear, from left to right, and top to bottom. Electronic texts often provide the reader with options to choose own reading pathways, skimming, scanning and zigzagging between different screens, combining reading and writing, using hyperlinks or watching videos and movies, and playing educational games. Teachers' awareness of these pedagogic differences in teaching and learning English helps to incorporate a variety of notions of hybridity and intertextuality in literacy. Teachers need to create documents, develop notes, links and connections and upload to learning sites for collaboration (Reid 2016). Learners work in teams and groups (of differing gender) to achieve the desired outcomes by documenting their thoughts, feelings and convictions through social group discussions. Groups are created with some levels of autonomy and rules for online etiquette.

The effectiveness and efficiency of collaborative networked learning opportunities depend on the groups' or teams' abilities to communicate effectively. Effective communication is dependent on digital connection, functional skills and access to the digital technology. Hague and Payton (2010) state that fostering digital literacy means going beyond the functional and presentational as well as giving learners the opportunity to use a wide range of technologies collaboratively, creatively and critically. The benefit of collaboration cannot be underestimated. In support of collaboration and creativity, Chen, Lee, Lin and Zhang (2016) summarises the key components of professional learning communities as supportive leadership, shared vision focusing on learners' learning, collaboration among teachers, applying what they have learnt to address student needs, shared accountability for learner achievement, structured time to allow workers to work together, assess learners, adjust (adaptation) teaching and learning strategies and continuously improve learners' results.

The most critical aspect of collaboration in the digital literacy environment is its ability to transform teaching practices and promote teacher learning. Teacher learning and adjustment to new technological environments promote critical thinking, and this skill needs to be transferred to learners for problem-solving.

d) Critical thinking in digital literacy teaching

The word “critically” is often associated with performing advanced tasks in reaching solutions to problems. Scriven and Paul (1987) say that

critical thinking is an intellectually disciplined process of actively and skilfully conceptualising, applying, analysing, synthesising, and/or evaluating information gathered from or generated by observation, experience, reflection, reasoning or communication as a guide to belief and action.

Selection of content, design of tasks, alignment of curriculum outcomes, initiating networks and management of the learning programme are basic teacher tasks in which learners’ critical thinking skills should always be prioritised (Hicks & Turner 2013). The definition by Scriven and Paul (1987) attempts to cover the set of skills developed through critical thinking. Digital literacy tasks should help learners to analyse information based on their experiences, evaluate information on the basis of observed frequencies and reflection on action and in action in order to develop strong convictions about their environment. The skills acquired should help learners to develop solutions to their problems and to apply them in different social settings and contexts. Critical literacy, critical language awareness and critical thinking share common attributes because they feed on each other’s attributes (Janks 2010). Since language is a thinking tool, an awareness and competence of language structures creates a sound infrastructure for critical thinking as a cognitive process, thereby supporting critical thinking (Lankshear & Knobel 2008). However, this study does not focus on the relationship between critical thinking and critical language awareness, but on how their interaction supports problem-solving through digital literacy.

Learners are empowered to interrogate content sources on cyberspace, establish patterns and integrate the skills into their lives. They should not be consumers of knowledge but active participants in the construction of knowledge about themselves and

the environment around them (Soby 2008). There is a direct link between critical thinking and cognitive psychology, especially in development of reading/literacy pathways (Reid 2016). Teachers create a platform for learners to collate and share knowledge that is collectively constructed and shared. Learners become confident on knowledge collectively constructed and owned. In this context, learning approaches using contemporary digital technology provide opportunities for constructivist learning through student-centred environments. It is important to indicate at this stage that for skills on critical thinking, collective knowledge construction and communication among group members, the participants need to have substantial levels of competence in the use of digital tools.

2.15 Digital competence in English language teaching and learning

Digital competence is a recent term that is often used in relation to ICT skills, technological development, computer skills, information skills, internet and digital skills. The term “digital competence” refers to a multimodal and complex concept which is constantly changing with development of digital media (Soby 2008). Adeyemon (2009) and Krumsvik (2008) agree that digital competence and digital literacy are synonyms. However, competence is not restricted to knowledge and skills but stretches further to an ability to meet complex demands by drawing on and mobilising psycho-social resources (including skills and attitudes) in a particular context (OECD 2005). It also consists of fundamental psycho-social and emotional aspects for using and understanding digital technology for different literacy forms. Punie and Cabrera (2006) define digital competence as involving the confident and critical use of information technology for work, leisure and communication. Soby (2008:119) posits that digital competence is

the sum of individual ICT skills, such as reading, writing and Maths and more advanced skills ensuring a creative and critical use of digital tools and media. ICT skills include making use of software, searching, finding, processing and controlling information from various digital sources, while critical and creative ability also requires ability to evaluate information and sources interpretation and analysis of digital genres and media types.

Digital competence is grounded in ICT skills gamut, meaning the proficiency in use of computers to access, retrieve, store, produce, present, and exchange information.

Proficient participants can communicate, share, and curate in collaborative internet work and projects. Some institutions, such as the Norwegian Ministry of Education, use the term “digital competence” to refer to digital literacy (Norwegian Ministry of Education 2007). In the study digital competence refers to the comprehensive ability to use digital tools effectively to search, find, interpret, curate, share and apply knowledge in problem-solving situations, particularly in the teaching of English in South African schools. In the context of this study, digital competence is fundamental for secondary school learners because the skills provide access to information and other English language learning digital affordances.

2.16 Connectivism and digital literacy in the English syllabus

Connectivism is a relatively new term for learning designs by digital natives (Savage & McGoun 2015). Connectivism is not solely about technology, but is about creating the conditions, space and opportunities for knowledge to be created in English pedagogy. Computers provide the stimulus in the environment while learners respond by participating in learning and other forms of communication programmes. Siemens (2005:12) contends that

the most powerful networked learning takes place when we connect to a network to find out new information, our understanding is developed through that engagement and the fruits of that process are then shared back into the network.

The above assertion clearly indicates that making connections using digital tools for digital literacy creates learning and teaching opportunities. Examples of connections in teaching and learning include partnerships (digital literacy communities), subject connections, professional learning communities, discussion platforms and information exchange programmes. Hague and Payton (2010) posit that the viability of the above-mentioned connections and networks depends on digital competence of learners and the availability of functional networks. This includes software awareness, proficiency in programs, and a positive mind set (a psychological trait linked to attitude) for digital literacy. Meanwhile, digital literacy practices provide learners with an opportunity for English grammatical awareness such as patterns inside words, inside sentences and

entire texts, and even emotional attributes of texts and effect of images on their thinking patterns.

Instant communication allows opportunities for sharing through the internet, e-mails, YouTube and Wikipedia (Prensky 2001, Leask & Pachler 2013. Hague and Payton (2010) point out that those online social networking sites allow people to collaborate by sharing and editing online content. English language teachers will access online dictionaries, thesauri, and grammar games. The chat sessions create opportunities for teachers to share experiences and strategies in teaching aspects of English language such as morphology, phonology, literature and sentence fragments. In addition to academic benefits, learners become emotionally connected to their learning process as they remain digitally and psychologically connected to their classmates – even after school. For this study, teachers deployed in resource-constrained secondary schools need skills and awareness on how they can integrate the digital technology in teaching English as second language. This study therefore sought to explore the strategies used by teachers in teaching digital literacy in English in township secondary schools.

When learners are connected and recognise the authority and systems in their connection, teachers become facilitators steering discussions and managing the network. According to Wang (2008) the teacher as facilitator has four key responsibilities, namely pedagogical duties, managerial responsibilities, technical skills and social responsibilities. The key responsibilities help the teacher to plan, organise and control the learning and teaching of English, including digital literacy (Gee 2004, Cope & Kalantzis 2009). The teacher as facilitator's pedagogical responsibilities include initiating well-framed questions affecting learners in their communities and then creating platforms that connect them to information sources. Once the discussion has started, the facilitator must maintain focus of the groups and demonstrate leadership through guidance and re-directing thinking. By so doing, the facilitator or teacher has to set the tone by maintaining moral values of the connection in order for the participants to generate knowledge about them. The facilitator should demonstrate the use of the system. Figure 2.3 illustrates the keys roles of the facilitator in connectivism practice. For this study, teachers are expected to have managerial skills, perform their pedagogical duties and provide English language learning opportunities for learners in resource-constrained secondary schools.

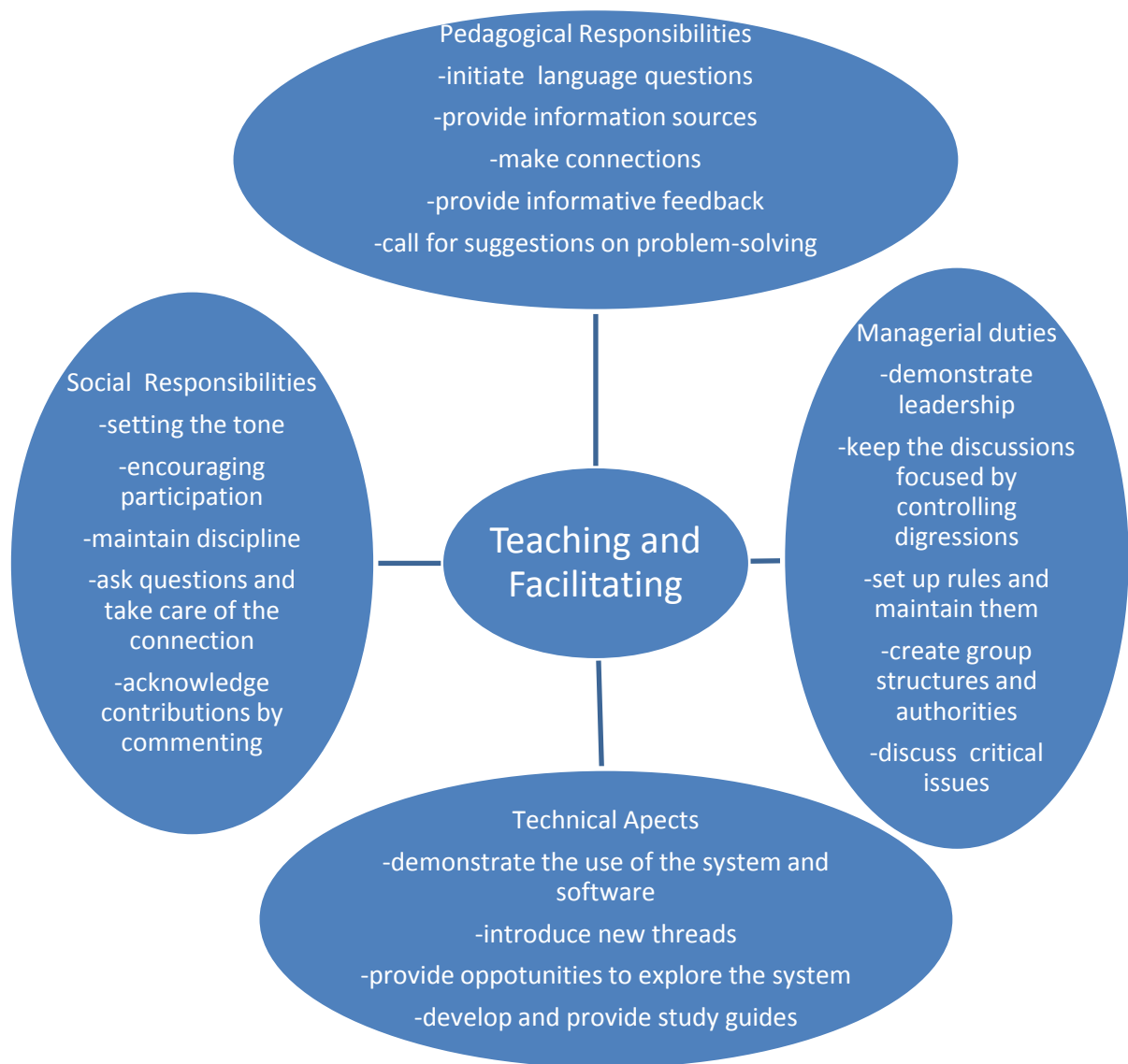


Figure 2.3 Teachers' facilitation responsibilities in digital literacy

In view of the focus of this study, teachers need a set of skills to teach digital literacy in township secondary schools. This study sought to explore the pedagogic strategies that close the skills gap for teachers teaching digital literacy in resource-constrained township schools.

2.17 Networking for digital literacy in the English teaching space

Networking, creativity, connectivity and learning have become modern channels used by digital natives to understand the world. Continents, countries, cities, provinces and

districts are connected through networks that are either physical, such as roads and railways, or wireless or through cables. Savage and McGoun (2015) posit that nothing and no one operates in isolation in the digital world. The world is a connection of different systems with factories, nations and markets connected in a network that serves their interests. Populations of the world are connected to form a network that functions through languages as medium of communication (Janks 2010). Technological development the world over has been connecting people across the social and educational divide. Telephone, cellular and computer connections have been bringing people together through networks. Subject learning communities are networks that rely on internet connections and websites to work on knowledge as working capital and indispensable information resources (Pahomov 2014; Savage & McGoun 2015). The review of networking in this study helps to provide an understanding of why teaching and learning needs to simulate other networks in the world of work and business. Learners need to understand networking and learning as a social practice in the context of the real world.

In the learning and teaching environment, network reminds us of the responsibility of the individual to the community of practice. Teaching is a complex network of people, subjects and communities. English teachers in a province or district form a community of specialists who are connected through a network of the subject specialists. Savage and McGoun (2015) state that network approaches to complex systems focus on interactions between phenomena in a system and not on the individual components of that system. Academic pass rates and teacher qualifications in English language teaching are examples of phenomena that form a system of interconnections. English teachers are interested in the nature of communication among students when they discuss content like the relationship between prepositions and verbs in a sentence or the impact of adjectives in creative writing. The debate on the relationship between these parts of speech can be given as an assignment that should be done through digital connection such as the internet or a cellular network. Social network sites are used as academic learning sites when learners construct knowledge through collaboration. The views mentioned above simply demonstrate how networks link people of similar interest for a common goal. In this study, an understanding of the role of networking, creativity and connectivity in digital literacy by English teachers in township secondary schools helps to make adjustments, create opportunities and devise appropriate methods and strategies

for teaching English under these circumstances. It therefore means that teachers need to develop skills and strategies to support teaching of the syllabus.

Digital technologies and the rise of social networking sites and online gaming have made it easier for learners to be connected to groups of their friends, peers and others who may be geographically interspaced (Driscoll 2001; Ellison, Steinfield & Lampe 2007). In this case, digital literacy facilitates processes of interaction and participation and allows learners to be active rather than passive in interpersonal contexts. Providing learners with platforms for connecting and linking with knowledge construction sites is a primary responsibility of teachers. The connectivity, networking and constructivism leads to digitally connected learning communities.

2.18 Creation of digital literacy English learning groups in township secondary schools

Knowledge is philosophically one body that has been fragmented and partitioned for human convenience. The philosophical assertion therefore means that all forms of knowledge have a link that makes it one body. Savage and McGoun (2015:28) state “that technology and social media can create connections between subjects in at least three ways namely: technologically, artistically and educationally”. People working in the arts industry can use video conferencing technologies to develop collaborative approaches to figuratively dance in an online environment. In other cases, technology works as a bridge between subject cultures. Trading space among engineers may require the linguistic input to enhance communication. Life sciences knowledge on human anatomy and physiology can be used by language practice students to study bodies as texts.

The past two decades have seen an increased online trade using some of the international languages such as English, Spanish and French (Driscoll 2001). For example, engineers need communication skills in languages of popular cultures in order to access capital markets in the global village. This shows a fluent relationship between subjects in real-life situations. For this study, creation of learning communities, use of video conferencing and linking with other subjects is critically important for providing English language learning opportunities.

The key point in the paragraphs above is the need for teachers to establish connections between subjects and link to national and global economies. Examples of connections

include language teaching methodologies, combining statistics and language in teaching visual literacy and linking with business studies. Multimodality in language teaching involves the presentation of texts for different literacy purposes in different formats such as graphs, pictures, videos, audio and written text (Anstey & Bull 2010). If digital literacy is defined as the skills, knowledge and understanding that enables critical, creative, discerning and safe practices when engaging with digital technologies in all areas of life (Hague & Payton 2010), then a re-mix, re-design, and incorporation of components from other subjects makes learning rich and exciting.

This holistic approach to knowledge links subjects to each other. In the classroom environment, teachers can ask learners to read an article from the internet for an English comprehension exercise. Learners need to learn computer application skills such as logging-on and using search engines to look for articles on environmental matters or political affairs. The English teacher provides sets of questions to guide the learners' search and examples of search engines and subject sites which provide articles. Learners may choose to use YouTube for audio, video images or the full text in 3-D format. Mathematics, Accounting and any other subject can be linked to English teaching when teaching visual literacy by importing documents in Excel worksheets for construction of graphs and demonstrating relationships between phenomena and analysing variance. Teachers and learners need proficiency in word processing and spread sheet software programs for them to complete exercises combining components from the three subjects. The implication for this study is that teachers need pedagogic skills in order to deliver knowledge and skills on digital literacy in English.

Savage and McGoun (2015) say that schools develop and connect with business communities, while communities connect with other educational institutions. These connections and links enrich the knowledge production process, thereby making it relevant to all partners. Teachers can form creative writing groups, develop subject sites to which they can appoint editors and content reviewers. Re-contextualised and re-purposed content knowledge is developed on subject blogs for students to post their contributions. Teachers can form cartoon creation groups for languages and such cartoons may then be posted and circulated on social media linked to subject content knowledge. All these activities need to be planned according to the procedures of teaching and learning in the context of the curriculum.

2.19 Planning for digital literacy in English language teaching and learning

Educational planning is a fundamental stage of teaching and learning. Teachers need to plan, organise, lead, and control the teaching and learning process (Norwegian Ministry of Education and Research 2007). Tsui (2003) states that producing English language lesson plans, selecting English language components to be taught, identifying skills to be imparted and the appropriate methodology for the level and context are critical responsibilities of language teachers. In adapting to digital literacy, teachers need to incorporate digital tools for digital literacy and adjust to the professional and pedagogical demands (Mumtaz 2004, Cope & Kalantzis 2009). The discussion on the planning of teaching digital literacy for this study helps to understand the procedures and the organisation of digital literacy learning programmes in schools. The stages of planning and suggestions on inclusion of digital literacy are discussed below.

a) Selection stage

The first step in planning is to identify the broad area to be planned such as grammatical competence in English, creative writing, comprehension, literature (poems, drama or prose) and/or teaching reading and literacy at secondary level. The teacher needs to select the topic in line with the syllabus guidelines and recommendations (Tsui 2003). For example, the teacher may choose to teach sentence structures. The content and skills include understanding the rules of English language in terms of the relationship between subjects, verbs and objects. Subjects have their distribution while verbs have inflections and derivations (derivational and inflectional morphology). This content forms the broad area on which the teacher needs to develop skills.

Once identification of the broad area has been done, teachers formulate broad aims and objectives. Choosing teaching methods is the critical stage where the teacher's pedagogical knowledge and content knowledge merges with digital technology for digital literacy. Methods selected should at least attain communicative competence if they are using the communicative language teaching approach (DBE 2011, Moodley 2013). The texts that they select or design should be in multimodal format in order to provide learning experiences and motivate learners on digital literacy. Planning also involves selecting pictures, videos, graphics and texts to be used depending on the aims and objectives of the lesson (Tsui 2007). The teacher's role includes selecting content for the

appropriate cognitive level and matching it with the current socio-economic trends using easily accessible appropriate software. Learners and teachers should have some level of competence in the software to avoid wasting time on learning how to navigate the software instead of using the software to learn concepts (Lotherington & Jensen 2011). A common practice among teachers in poorly digital literacy inducted learning environments is that they spend a lot of time learning how to use the computer rather than learning with the computer. In the next sub-section I discuss the strategies that can be used to link content to methods.

b) Linking English language content to digital literacy methods

Teachers possess content knowledge and pedagogical content knowledge which should be merged with technology to provide a rich learning environment. Tsui (2003) and Leask and Pachler (2013) posit that the fundamental aspect of digitalisation in teaching is to link the methods to content and develop language skills in learners. English teachers link methods and content by presenting sentence structures clearly indicating the subject and predicate and breaking them into constituent parts in a PowerPoint presentation. Teachers can use games that require of learners to choose the correct predicate linking the subject. When the subject and the correct predicate match, the software programme records a score. The game can be played in a group with the teacher controlling and managing the group discussions as well. Table 2.1 illustrates the relationship between the subject and the predicate.

Table 2.1 Relationship between a subject and its predicate in a sentence

Subject	Predicate
1.The teacher	broke the chair.
2.The boy	kicked the ball.
3.Thabo	went to school.
4.Father	drives a car.

The subjects in sentence 1 and 2 are made up of the /The-/ which is an indefinite article and the predicate made up of the verb in past tense /-broke-/ and /-chair-/ , which is the object in sentence 1, while /-kicked/ is the predicate and /the ball/ is the object in sentence 2. Sentence 3 consists of a proper noun /Thabo-/ and the predicate /-went to

school/ which is the verb phrase with an object /-to school/. Sentence 4 has a common noun /Father-/ as subject and the predicate which is a verb phrase /-drives a car/ which has /-a car/ as the object. These are some of the parts of speech in English and teachers can take initiative on using the strategies for digital literacy practices. The implication for this study is that parts of speech in English can be taught using digital tools and the information can be presented in different ways. The knowledge gap in this study is rooted in the initiatives or strategies used by English teachers in teaching digital literacy in English for proficiency.

Another method that can be used by teachers is to ask learners to categorise the different parts of speech in the sentences in the table 2.1. Learners categorise the parts of speech on the basis of their previous knowledge on identifying features of the parts of speech. The text can be presented in a PowerPoint presentation to demonstrate with animations how the different language components join together to form a simple sentence. In other cases, a picture or video of the teacher breaking the chair can also be presented. By presenting content in this format different colours, font sizes and types may be used to provide appealing backgrounds with animations that motivate learners at different cognitive levels. Technology allows learners to save their work for future reference and compare their work with that of others. This whole process is an adaptation by accommodating digital literacy in language teaching and learning (Bandura 1977). This adaptation eliminates the myth that the use of computers and digital technology is for science (e.g. Physics, Chemistry, Biology, Architectural Engineering) and technology teachers only. Inappropriate methods merged with disaggregated content have the potential to frustrate learners and demotivate them from learning through using digital tools. On the basis of the innovative use of digital technology, I sought to explore the strategies used to teach digital literacy in English in resource-constrained secondary schools.

c) Designing digital tasks for learner participation

Designing tasks involve creation, sharing and curating activities that engage learners in critical thinking and finding solutions to problems (Ofcom 2009). The teacher's role is to create language tasks to be completed by learners either online or using multimedia. By leaping and scaffolding forward, teachers answer questions and give direction in the learner's learning process (Leask & Pachler 2013). For example, nouns work as objects

in sentences. When this type of learning takes place, learners are also exposed to other language competency skills such as spellings, concord and clauses because the software can indicate incorrect spelling and offer alternatives, or learners can use spelling and grammar checkers. The process of self-correction is rewarding in itself and provides ownership of the learning programme by learners.

Teachers may also create subject platforms or blogs where learners may participate even after school as they communicate with friends, classmates, or even family members. In linking content to methods, digital literacy and multimodality, learners can draw cartoons and then use particular nouns and verbs to describe the cartoons. The teacher's role is to encourage learners to draw cartoons on, for example, environmental protection and conservation, but paying attention to online etiquette. In support of these digital literacy practices, Richards and Rodgers (2001) and Moodley (2013) contend that communicative ability is attained when learners use verbs and nouns to construct sentences. When these exercises are completed online, learners can edit their work, use grammar checkers, ensure that they communicate a meaningful message and link their message to the cartoon. The drawing of cartoons requires learners' digital competence of drawing tool bars and how to use the different tools to shape, curate and share online images and videos (Pahomov 2014). In this context, developing digital literacy in subjects is not about being fashionable or simply about trying to engage learners in learning. It is about addressing the changing nature of subject knowledge and acknowledging that young people need different kinds of skills, knowledge and understanding in order to develop their expertise (Buckingham 2007). The knowledge and skills acquired should help learners to function in the world in which they live and to cope with the challenges it contains.

The teacher's role in the provision of skills to function in life is to edit, maintain discipline, and to push the learners to advanced boundaries of learning in line with curriculum outcomes and goals. Preparation must have covered teachers' research on videos on YouTube that can assist in teaching the aspects. In this case, the teacher can link learners to online cartoons and articles on how verbs and nouns are used in simple sentences. In other aspects of English teaching, like comprehension passages, teachers need to select articles that are interesting and combine text, sound, visuals, and audio in order to provide a platform for development of multitasking skills and opportunities for multiliteracies from digital literacy practices. Learners also use their skills in reading

pathways. For this study, an ability to integrate technology helps teachers to improve learners' reading and writing skills but this study focuses on how digital literacy is taught in English in township secondary school settings.

Digital natives are characterised by a need for instant feedback and quick sharing of information with peers, therefore learners will be excited to get comments from their teacher and friends (Buckingham 2007). The major challenge in this learning platform is the availability of the network and digital competence. Rural secondary schools, resource-constrained township secondary schools and informal settlements are often victims to poor network connections, a lack of digital skills by teachers, or poor equipment, or the complete absence of digital tools. In cases where connection is possible, teachers provide feedback or design learner activities providing responses instantly.

2.20 Teaching English in township secondary schools with online resources

Online sources are a pool of information that requires careful selection and evaluation. If digital literacy is understood as a critical engagement with technology and developing social awareness on commercial and cultural understandings, then the knowledge sources and procedures need constant evaluation (Hague & Payton 2010). Since learners in our classes are digital natives who have grown up with technology and a wealth of skills that surpass those of digital immigrants (Prensky 2001), the responsibility of teachers is to select appropriate sets of skills and content that support learners in the world of work. The selected content should be relevant and helpful to the learning programmes. For example, Rose (2009) says that the selection of content for the new curriculum in South Africa stresses the need for development of skills such as being able to work as a team, thinking creatively and solving problems.

In the process of selecting content for learners, teachers need to eradicate content that is harmful to learners and that could easily be copied and pasted without considering the consequences of plagiarism. In this regard, Hague and Payton (2010) and Motteram (2013) indicate that young people are exposed to vast amounts of information in contexts of commercial agenda or commodified knowledge structures that may be difficult to interpret. For ease of access to the digitally presented content, learners need to be confident and competent in the use of technology in a way that will enable them to

develop their subject knowledge by encouraging their curiosity, supporting their creativity, and providing them with a critical framework for their emerging understanding.

Online sources support the learning process by allowing learners to find and select relevant subject information in different formats. Digital literacy provides opportunities and platforms for sharing, creating and curating knowledge that suits their needs and expectations (Motteram 2013). In view of the fact that the internet is a worldwide network of computers linking people and nations from different backgrounds, learners need to choose content that is relevant to their context, level, and which is of interest for their future. Examples of online sources include digital libraries, internet websites, web mails, e-mails, podcasts, advertisements, Facebook pages, Twitter and any other connectivity-based communication resulting in the construction of knowledge.

2.21 Digital literacy and traditional writing proficiency in secondary schools

Digitalisation, globalisation, multimodalism and post-modernism have increased the democratisation of knowledge in the networked society and have challenged modern configurations of truth and authority (Lotherington & Jensen 2011). This is evident in the ways in which traditional notions of literacy are being reshaped by digital forms. Wikipedia is an example of an online resource that is produced, accessed and edited collaboratively by multiple users across different regions on the globe. While paper-and-pen writing has been traditionally tied to language learning capabilities, the transformation to digital literacy has a set of advantages. Lankshear and Knobel (2008) view the shift to digital literacy as one that is shorthand for the myriad of literacy social practices. The social practices include conceptions of engaging in the meaning making process mediated by texts. The texts are produced, received, distributed, and exchanged via digital codification. In support of the above assertions, Lankshear and Knobel (2008) say that the electronic texts, which include images, movies, podcasts, blogs, and online social networking sites encode knowledge differently and that this is produced and known differently from the traditional print-based literacies. The traditional pen-and-paper writing process depends on the ability to use letters of the alphabet in clusters according to the rules of the language chosen for written work. Digital literacy requires competence in digital tools and awareness of different software used for writing and production of texts. Janks (2010) states that digital texts have six design elements in the meaning making process, namely linguistic, visual, audio, gestural, and spatial meaning, and

multimodal interplay. Moving paper pages requires an ordinary left to right reading strategy whereas the electronic page has 3-D format, colour, and font type, often combined with graphic pictures (Jones 2006). The provision of such learning platforms and practices clearly brings unique experiences to the learners' lives. This discussion brings us to the initiatives taken by teachers in developing and teaching digital literacy in township secondary schools. Digital competences are important – particularly with the focus of this study because they support the exploration of strategies used by teachers in teaching digital literacy in English.

2.22 Initiatives on digital literacy by teachers in resource-constrained settings

Initiatives are specific activities and actions planned and organised to be undertaken in order to achieve strategic goals. Broadly, teachers' initiatives fall within the realm of the government's agenda of providing quality education to the nation within the socio-economic and political context. Leask and Pachler (2013) state that initiatives are plans, actions and strategies used to improve the quality of teaching and to meet the desired goals of both the teacher and learner. For teachers in the digital age, initiatives include cross-pollination of ideas, dynamism, creativity and interdisciplinary approach to digital literacy. The teach-to-teacher initiative seeks to integrate the teaching of economic concept in all other subjects in order to understand economic concepts and informational analysis from reading models. Initiatives are time-specific tasks or projects that are necessary to achieve objectives. An initiative may support multiple objectives and also determine readiness to embark on bold new ventures. In the context of this study, initiatives include investing time in learner digital literacy and inculcation of a positive mind-set towards that form of literacy. Job ability, willingness to work in teams and being proactive are common characteristics of initiatives for classroom practice in digital literacy pedagogy.

The Punjab English teaching initiative in India is an intervention programme which was designed to help teachers develop skills of intervening to assist learners with difficulties in learning English. In support of the development skills of intervention Leask and Pachler (2013) say that online networking and collaboration provide an opportunity for teachers to make contact with subject specialists and access to academic resources such as lesson plans, learner activities and assessment programmes. In the South

African context, Zibuza.net is an online project connecting teachers via the internet across provinces and districts to enter into discussions on material resources for different subjects. The platform provides opportunities for teachers to discuss challenges in content knowledge delivery, methodological perspectives, material resource mobilisation and activities in language teaching and learning. For this study, digital literacy practices in varying contexts inform the research on the integration process and the nature of initiatives taken by teachers in teaching digital literacy in English.

Digital literacy inclusion should not be understood to mean deserting the curriculum, but that the strategies of teaching need to accommodate and adapt to the requirements of digital literacy. English teachers in South Africa need to teach grammatical structures, the writing process, essays, comprehension passages, reading and critical analysis in literature to improve understanding, speaking, reading and writing competence. The four macro skills in language teaching and learning (listening, speaking, reading, and writing) need to be covered (DBE 2011). However, digital literacy as a concept incorporates the use of computer technology in handling content for delivery. Information presented via computers can be text, video, pictures (3-D format), diagrams, simulations in series of multimedia, compact discs, linked videos and graphical presentations (Leask & Pachler 2013). In secondary schools in South Africa, films and videos are used to teach English literature such as *Macbeth*, *Maru* or *The Merchant of Venice*. Janks (2010) contends that if texts can be constructed they can also be de-constructed into constitutive elements for analysis. In view of text construction, digital technology, which can save, transfer, change font type and colour, helps teachers to present information in different modes in teaching digital natives, and de-construct text in order to teach constituent parts using digital literacy approaches. In this study, I therefore sought to explore the initiatives and strategies used by teachers to teach digital literacy in English.

The challenge in resource-constrained schools is the availability of the technological equipment and the skills gap or the gap in digital competence between teachers and learners. Most teachers in resource-constrained schools struggle with inadequate computer equipment for large classes and an inability to present effective lessons using computer technology. This study explores the initiatives that township secondary school teachers are taking to teach digital literacy. In relation to the constraints faced by teachers, questions like, 'How is electronic writing taught and assessed in secondary schools?' could be inherent among researchers. In the same vein, reading online and

electronically developed texts requires digital competence skills. In the interest of understanding teachers' pedagogical practices, researchers ask questions like, Do teachers have the requisite skills to teach online reading and comprehension? For digital literacy, information is presented in different modes and readers need to develop editing skills and distinguish different kinds of texts, in different formats, as well as their purpose. Teachers need to guide learners to find texts that are academically sound, and guide them away from contaminated texts. For this to happen, teachers must be motivated to take on the learning tasks and find gratification in accomplishing set targets.

In the context of teacher resilience, learners and teachers face adverse conditions such as a-literacy. Scott (1996) defines a-literacy as a lack of reading – especially in capable readers. In response to challenges of a-literacy, teacher initiatives and strategies on teaching of digital literacy help to cultivate a culture of reading thereby overcoming adverse conditions. In the context of this study, an awareness of the requirements of the digital environment and digital competence are key factors in the exploration of the strategies used to teach digital literacy in English.

2.23 Digital literacy and the world of work

Language technology, targeting all forms of written text and spoken discourse, can help people to collaborate, conduct business, share knowledge and participate in social and political debate, regardless of language barriers and computer skills. Today, digital natives have more options about how and where to spend their learning time (e.g. in online settings or in private, public, or home school options) than they did some decades ago. Young people are mostly oriented towards interactive, creative and media technology. They have access to technologies in their everyday lives, and believe that more use of such technologies in school would lead to increased preparation and engagement (Levin, Arafeh, Lenhart & Rainie 2002, Spires, Lee, Turner & Johnson 2008). Levin et al. (2002), in surveying 3 000 public school students, identified a “digital disconnect” between students and their schools, with students claiming that their teachers had not yet shifted their teaching to respond to the new ways students communicate and use the web beyond their classrooms. One student respondent contemplated that “if WhatsApp was in school, then our studies would be made easier”.

This assumption from students confirms the need for connectivity in the learning environments to enhance student communication and as cognitive thinking tools. Lenhart, Madden, Macgill and Smith (2007) suggest that teenagers prefer multichannel communication, such as text messaging, instant messaging, and communication through social network sites, to traditional e-mail and face-to-face communication. Through sites such as Web.2.0, the youth share media (e.g. photos, music and videos), exchange messages, form groups, request information, articulate or develop personal connections, post or remix digital content, and create or comment in blogs (Lenhart et al. 2007). Contrary to most assumptions, the youth's online social activities are not devoid of online disciplinary challenges and access to harmful content. Teachers have a duty to check and supervise internet use match content to learners' academic levels. A survey from the National School Boards Association (2007) reported that students' online sharing in social network sites involves education and learning. Sixty percent of students surveyed reported using their social network sites to talk about education topics, and 50% reported talking specifically about schoolwork (National School Boards Association 2007). In support of the above views, DeGennaro (2008) describes an example of education-oriented Web 2.0 use by a group of students who persuaded their advisors to use instant-messaging technologies, leading to home-school activities in which students and advisors negotiated goals and co-constructed solutions. In support of the initiative, teachers need to devise pedagogical strategies on the teaching of digital literacy in South Africa or that assessments should now consider multimodalities in questioning for final examinations. There is evidence from research that some students fail to get good grades, not because they have no content knowledge about the subject, but simply because they are not proficient in different kinds of literacy required for the subject.

Of course, creating multimedia content is not necessarily the same as creating new knowledge, as in the case of wiki pages that synthesize a range of content but do little to generate meaningful patterns, compositions, or ideas not clearly present before, thereby advancing the state of knowledge in a field (Anderson, Krathwohl, Airisian, Cruikshank, Mayer, Pintrick, Raths & Wittrock 2001).

Another important feature of digital technology is interactivity facilitated by features that do not require sophisticated technical expertise but allow users to publish, share, consume, and remix content. Blogs, wikis, video-sharing, photo-sharing, and audio-

sharing sites can engage students in promoting their academic work while also critically considering the work of others. Participatory culture might take the form of “affiliations,” such as online communities centred on people’s backgrounds, interests, connections, and media (e.g. Facebook, Myspace), creative self or collective “expressions” (e.g. fan video making, mash-ups), “collaborative problem-solving” (e.g. Wikipedia), and “circulations” (e.g. podcasting, blogging) (Jenkins 2006:1). Such opportunities might promote potentially richer opportunities to make learning more personally meaningful, collaborative and socially relevant. In the next section I discuss the implications for the South African English syllabus.

2.24 Implications for the South African English syllabus at secondary school level

The primary requirements of language teaching is to achieve proficiency in understanding, speaking, reading and writing in the relevant language for social interaction, access to important information in both academic and business domains. Li (2012:9) states that

metacognitive strategies or self-regulated learning strategies involve the process of setting goals, planning what they will do, selecting and deploying learning strategies and monitoring the effectiveness of those strategies, solving problems encountered and evaluating performance and achievement.

Metacognition is a crucial skill for second language learning programmes. It is commonly used by highly proficient readers of any language. Students often lack the learning strategies and also struggle to select, evaluate and adjust strategies to suit their specific needs. This is where teacher initiatives are of critical importance on the basis of their experience and competence in language teaching. Teachers need to constantly give learners online or digital tasks to complete in class or at home. The tasks should be designed in a way that motivates learners towards achieving their desired goals or within a level of self-efficacy.

In curriculum planning, organisation, and implementation teachers need to select content in consideration of the needs of society and an awareness of the social challenges. The selection of content is informed by the guidelines provided in the CAPS (DBE 2011). While the internet provides a pool of information, it needs a specialist to carefully select activities relevant to the South African curriculum requirements. This makes the literacy

relevant to the needs of the economy and linking it with trends in the global village. Teachers need to provide activities within the framework of the national curriculum and that which can solve learners' problems in life. In the context of English language teaching, selection of texts, content, and literacy genres should be with the South African context.

Teaching learners to Photoshop and develop a collage of pictures that tells a story should be part of the school's effort to embrace digital literacy by tapping into the trends and innovations which capture pupils' imaginations. Most teachers have pedagogic skills in teaching using pen and paper and the need to re-skill and reorganise teaching into the electronic format is an imperative for teachers in the digital age. Methods such as zigzagging in reading, interpretation of pictures (Instagram), analysis of videos, online writing and participation in podcasts are strategies for digital literacy. However, teachers should take note of the individual capabilities of learners without lowering their self-efficacy levels. According to Scott (1996) evaluation of tasks should not necessarily be on group achievement but on personal progress. This discussion highlighted that although there is understanding of reading and the general use of technology in education, there is still need to explore the strategies used to teach digital literacy in English.

2.25 Conclusion

In this chapter I focus on a review of literacy, digital literacy components and practices, and resilience in the teaching of English. The study attempts to explore the strategies, capabilities, and potential opportunities embedded in digital literacy teaching and learning. The discussion includes a review of the global experience, African perspectives and the South African environment on the digital landscape in view of digital literacy for proficiency in English language teaching and learning. Models of online projects, the use of social networks, subject communities, and other network connections are important for both physical and virtual class teaching and management. In the next chapter I discuss the research paradigm, research design, methods and data collection procedures as well as an analysis of the findings. I further highlight how I used the findings to answer the research questions in an attempt to address the knowledge gap I identified from the literature.

CHAPTER 3: RESEARCH DESIGN

3.1 Introduction

In chapters 1 and 2 the focus is on introducing the study, presenting research questions and developing the conceptual framework for the purpose of understanding teacher initiatives on the use and teaching of digital literacy in English. Key concepts reviewed in the literature are digital literacy, language proficiency, teaching and learning strategies in English pedagogy. To answer the research questions, this chapter presents the epistemological paradigm, research approach, design, data collection, presentation of findings and data analysis. The design is predicated on the interpretivist-constructivist paradigm. Teacher initiatives take place within social contexts thereby making the teaching and use of digital literacy a social phenomenon. In this study, qualitative research is the approach of choice in exploring a social and human phenomenon involving language learning and proficiency with the support of digital technology. I also discuss the quality criteria and ethical issues related to case study research focusing on teacher initiatives on digital literacy in the teaching of English.

3.2 Paradigmatic orientation

The study is rooted in the interpretivist-constructivist world view. According to Creswell (2013) interpretivism attests to how participants assign meaning to their actions as well as how social constructions yield knowledge about their practices. Saunders, Lewis and Thornhill (2012) further say that interpretivism is associated with the philosophical position of idealism, and is used to group together diverse approaches, including social constructivism. Interpretive researchers assume that access to reality (given or socially constructed) is only through social constructions such as language, consciousness, shared meanings, and instruments. The interpretivist-constructivist paradigm takes the view that reality is subjective and differs from person to person in varied contexts (Scotland 2012, Creswell 2013). The beliefs about ways of knowing, what can be known and how this research is intended to arrive at its findings and conclusions is informed by the interpretivist-constructivist paradigm (Creswell 2013). The world to us depends on our consciousness which engages with objects in the physical world that are

loaded with meaning. In view of interpretivism developments, Nieuwenhuis (2010:23) states as follows:

From the original conception of interpretivism (hermeneutics) a number of interpretive approaches developed such as critical theory, phenomenology and constructivism. What we find as a common trend is that interpretive researchers start out with the assumption that access to reality (given or socially constructed) is only through social constructions such as language including texts and symbols, consciousness and shared meanings.

On the basis of the assertion above, constructivism belongs to the broad framework of interpretivism. Interpretivism focuses on participants' subjective experiences and how they construct the social world by sharing meanings. Interpretivists assume that reality is not objectively determined, but socially constructed (Nieuwenhuis 2010). The basic contention of the interpretivist-constructivist argument (in which this study is rooted) is that reality is socially and contextually constructed by and between the persons/humans who experience it (Darlaston-Jones 2007). Constructivism attests to the view that individual and collective reconstructions sometimes coalesce around consensus (Denzin & Lincoln 2011). According to Denzin and Lincoln (2011) it is possible to blend elements of one paradigm into another in order to get the best of both world views. I chose interpretivist-constructivism in order to understand and construct meaning of participants' initiatives on the use and teaching of digital literacy in English. Creswell (2013) presents interpretivism as the broader framework of which social constructivism is a constituent part. I therefore sought to understand how meaning is assigned by participants to construct meaning from my interaction with the participants in this study. In view of the paradigmatic connection, their interface is on the basis of qualitative research lying in the interpretive approach to social reality and the description of the lived experience of human beings. In this case, I used a qualitative research approach to explore the behaviour, feelings, perspectives and experiences of people and what lies at the core of their lives.

By implication, participants in a case study exist within a specific context which creates an opportunity to understand their own perceptions of their own activities. The exploration of teacher initiatives on digital literacy in English teaching takes place in school settings (social institutions), which allows for participants' assigned meanings to be shared with colleagues and researchers. The interpretivist-constructivist paradigm as

a philosophical lens helped me to understand participants' views and their actions regarding the use and teaching of digital literacy in English (Creswell 2013).

Theories of knowledge are rooted in philosophical orientations. In these philosophical permutations lie the fundamental values, ethics and moral choices. According to Saunders, Lewis and Thornbill (2012) philosophers and epistemologists disagree about paradigm – there is no correct answer. Mkanzi and Acheampong (2012:132) contend that a number of studies have “used different descriptions, categorisations and classifications of research paradigms and philosophies in relation to research methods with overlapping emphasis and meanings”, and they suggest that efforts should consequently be made to develop a well-planned systematic framework as well as procedures indicating some level of consensus for novice researchers to participate in research without being confused. Guba (1990) says that research paradigms can be characterised by their

- ontology – nature of reality (What is reality?)
- epistemology – how knowledge is constructed (How do you get to know something?)
- axiology – research is value laden (What things have intrinsic value in the state of affairs?)
- methodology – procedures used to get knowledge (How was the knowledge acquired?)

A paradigm is a set of common beliefs (or metaphysics) and agreements shared between scientists about how problems should be understood and addressed (Kuhn 1962). In other terms, a paradigm may be understood as a “school of thought” or how belief systems are constructed. Denzin and Lincoln (2011) use the term “world view” to refer to paradigms that assist in human thinking frameworks and guide research practices. World views and beliefs play a critical role in informing researchers' practices by influencing preferences and choices (Bryman 2012). For this study, I chose the interpretivist-constructivist world view because of the belief that knowledge is socially constructed (constructivist tenet). In this context, the teaching of digital literacy in English takes place within human interaction. Teachers and learners interact in classroom environments and construct knowledge which I sought to understand. Reality about the teaching of digital literacy can be understood in the teaching and learning context of English language learners in resource-constrained secondary schools. The

epistemological paradigm informed the choice of the research approach, methodology, data collection and analysis for the study.

Cohen and Manion (2007:7) say that “epistemology is concerned with the nature and forms of knowledge”. In this context, reality needs to be interpreted and can be used to discover meaning in underlying events and human activities. Crotty (1998) and Flick (2014 a) agree with this view that no single reality exists. Reality also refers to the relationship between the knower and what can be known. Interpretivist-constructivists view the research process and the products as a co-construction between the researcher and the participants. Participants are active informants in the research. In my study I interviewed participants as individuals and in groups. The multivoiced data and excerpts in chapter 4 represent the views of the participants regarding their understanding of digital literacy and the initiatives that they are taking to teach digital literacy in English (McMillan 2008).

Ontology is defined as “the science of or study of being” (Crotty 1998:10). It is concerned with the “nature of reality” (Bahari 2010:23). In fact, Bryman (2012) says ontology is concerned with what constitutes reality. Identification of ontology at the beginning of a research investigation is fundamentally significant because it informs the choice of a research design. I selected nine participants from resource-constrained secondary schools in the Tshwane North district in order to adhere to the ontological beliefs of multiple realities (Erlingson & Brysiewicz 2013). In this case, participants hold different views regarding the teaching of digital literacy in English and therefore I sought to explore their actions in classroom practice regarding the teaching of digital literacy in English. I chose an exploratory case study design because multiple realities emerge from interacting with participants from relatively similar contexts with varying conceptualisations of the same phenomenon. I chose participants from three township secondary schools in order to understand how they teach digital literacy in different ways in English. For this study, understanding of ontology helped in the choice of the case study design. From the case study design I was able to understand what constitutes reality together with its subjectivity in different English second language teaching and learning contexts.

Axiology is a branch of philosophy that studies judgements about value. It is also called theory of value and is historically based on nature’s laws. Saunders, Lewis and Thornhill

(2012) state that axiology primarily refers to the aims of the research. In essence, research is value bound and the researcher forms part of what is being investigated, and is subjective. In a case study design, small samples and in-depth investigations yield qualitative data. For this study, my interaction with participants yielded data constituting knowledge about reality that was shared with the researcher. The views of participants as key informants were critically important and valuable to my study because they provided ingredients for analysis, thereby making meaning of their actions and views. More important is the significant experiences of the participants to the research process and the researcher. For this study, participant views regarding the teaching of digital literacy are valuable in making a significant contribution to the co-construction of knowledge.

However, critics question the reliability of subjective stories (teachers' experiences with digital tools) and observations, but its rigour is rooted in triangulation where multiple methods are used for data collection and member checking is done for consistency (Salvador 2016:5). Researchers and participants as social actors play different roles in constructing reality that is interpreted by both partners in making meaning about themselves (Goduka 2012). For this study, subjectivity was an attribute of the exploration because participants use and teach digital literacy in different ways and for different outcomes. I used semi-structured interviews, non-participant lesson observations, field notes and document analysis for data collection, thereby adhering to the multimethod data collection procedure advocated by the interpretivist-constructivist paradigm (McMillan 2008). However, I am aware that the interpretivist-constructivist paradigm can be challenged as it tends to place critical importance on human interaction at the expense of non-human physical actions influencing human actions and settings. In view of the above assertion, I focused on the views of participants regarding non-human physical actions (Morris 2015). The process helped to get insights on the participants' actions and views in respective contexts. In this study, teachers as participants develop strategies/approaches in the teaching of digital literacy by using their previously acquired experience and modifying them to suit the current situation. As researcher I had to develop an intimate and fiduciary relationship with the participants in their contexts in order to understand their actions and their views (Kawulich 2005). A close relationship creates an opportunity for co-construction of knowledge about the participants. I

therefore briefly discuss the research approach and explain why I chose this approach for the study.

3.3 Research approach

The research approach for this study is qualitative. According to Yin (2016:9) qualitative research is “studying the meaning of people’s lives as experienced under real-world conditions”. People perform their daily roles through interaction. Qualitative study is a process that entails multiple data collection methods for analysis (Creswell 2013). Social interaction occurs with minimal intrusion by artificial research procedures (Yin 2016). The key elements in a qualitative research approach include its devotion to representing the views and perspectives of participants (human experiences), embracing the contextual conditions (natural settings) within people’s lives, and the desire (willingness) to explain social behaviour through existing or emerging concepts (Creswell 2013). Qualitative approach is subjective in nature (Hammersley 2012, Yin 2016). Qualitative research renders subjectivity in understanding phenomena. In the exploration of teacher initiatives in the teaching of digital literacy in English, subjectivity helped me to determine the different strategies used to teach.

The qualitative design is defined as a process of detailed understanding of human problems based on a holistic picture formed with words by reporting views from informants in natural settings (Yin 2016). Public secondary schools in the Tshwane North district are the natural settings which were studied in their respective resource-constrained contexts. The qualitative approach is a methodological approach that does not rely on numerical data and quantitative statistical procedures, but relies heavily on social construction of knowledge through interaction (Bryman 2012). In fact, the qualitative approach promotes better understanding of individuals’ beliefs, actions, and experiences. As opposed to positivistic enquiry, which reduces human behaviour to controllable variables in order to quantify and calculate (manipulate) mean scores, qualitative enquiry depends on narratives rooted in subjective perceptions (McMillan 2008). My study sought to explore participants’ pedagogical strategies, creative abilities and roles in teaching of digital literacy in township secondary schools. In this case, the qualitative approach helped better understanding of participants’ beliefs and values regarding the teaching of digital literacy in English.

The qualitative approach involves the collection of rich descriptive data culminating from human actions within the context (De Villiers & Fouche 2015). In this study, I used semi-structured interviews with open-ended questions to get stories about participants' experiences on a phenomenon (teaching of digital literacy). Considering that teacher initiatives take place within context (teaching and using digital literacy in English in resource-constrained township schools), the qualitative research approach guided my exploration and understanding of participants' experiences, thoughts, reflections, memories, understandings, interpretations and perceptions of digital literacy as these impact on their lives. Sharing experiences empowered me to establish why English teachers use the particular strategies and approaches to teach digital literacy the way they do in township secondary school settings. According to Seidman (2013:13) the stories of participants "are a way of knowing". According to McMillan (2008:25) "the research problem for a case study focuses on what is essential for the meaning of the event, episode or interaction". It also focuses on the participants' voice. The qualitative approach was suitable for my study because exploring human understanding, perceptions and actions requires a close relationship with the participants in order to obtain an insider's view – even as a non-participant observer. I had to patiently listen attentively to the narratives while recording the views of the participants regarding the teaching of digital literacy. In this study, the interpretivist-constructivist epistemological paradigm also supported the qualitative research approach because it views knowledge as socially constructed through interaction such as exploring teacher initiatives on the use and teaching of digital literacy.

The qualitative approach seeks to understand social phenomena in the contexts in which they occur.

In contemporary society the way people live their lives, the issues they face, their experiences and how they see and make sense of the world are extremely varied and not necessarily evident to the researcher. Also, differences in terms of status, income, wealth, ethnicity, age, sexual orientation and lifestyle, combined with massive population concentrations, mean that there will be a good deal of social reality which is not part of the researcher's experience (Morris 2015:5).

In view of the set of beliefs and values above, qualitative researchers seek to understand the truth and knowledge about communities considering their socio-economic situation, age and other social contexts. The best way to capture people's life experiences with its nuances is through interviews. Based on the views of Morris (2015), it is important to

understand how participants interpret the world within the circumstances in which they live. I sought to understand strategies used by participants through interaction with the aim of getting to know how they solve digital literacy problems in their environments. In my study, I sought to understand how teachers adapt to teaching digital literacy in the face of resource constraints in township secondary schools.

In view of the nature of my study, I chose two intellectual goals of the qualitative approach that are relevant to the study and justified the choice of a qualitative design.

Maxwell (2013:24) identifies two intellectual goals:

- a) Understanding the meaning, for participants in the study, of events, situations and actions they are involved with, and of the accounts that they give of their lives and experiences.
- b) Understanding the particular context within which participants act and the influences this context has on their actions.

In relation to my study, the intellectual goals of the qualitative approach guided me to understand how participants understand digital literacy, initiatives/strategies used to teach digital literacy, and the beliefs behind their actions. The qualitative approach helped by providing insights and guidelines on how to understand the participants' actions in their different contexts (resource-constrained schools). Participants' initiatives were explored in township secondary schools in view of the challenges in the environment. On the basis of qualitative intellectual goals, I was able to understand how resource constraints in secondary schools influence participants' pedagogical choices and digital literacy practices in English in order to attain their desired outcomes. The participant initiatives are part of the adaptation to adverse conditions of resource constraints. In the process, participants adjust, create alternatives and options that improve the teaching of English as a second language.

Qualitative researchers characteristically study small numbers of participants or situations and preserve the individuality of each of these in their analysis, rather than collecting data from large samples and aggregating the data across individuals or situations. I chose to study a small group of English teachers (total of nine English teachers purposively selected from three township secondary schools) who are using and teaching digital literacy in township settings. This selection determined the case-study design because of the need to focus on a particular group of participants in similar settings or experiencing the same phenomenon.

3.4 Research design: exploratory case study

A research design is a systematic and organised procedure to find possible solutions to problems. Creswell (2013) says that it is a step-by-step process used to collect data using appropriate procedures, then analysing it in order to increase our understanding of a human and social phenomenon. According to Yin (2012:3) a case study “include(s) designing the study, collecting data, analysing the data, presenting and reporting the results”. The process is carefully organised in a unique way for each kind of research. I used a case study design for this exploration because digital literacy in resource-constrained secondary schools is a critical issue in the Tshwane North district due to a lack of digital resources and limited pedagogical support from curriculum planners. Yin (2012) says that an exploratory case study is pertinent when the research addresses either descriptive or exploratory questions. I could not use cross-case study because of the nature of the topic (exploration of initiatives) or a multiple case study as the focus was on initiatives taken by participants in almost similar contexts (resource-constrained environments). The exploratory case study is strongly backed by grounded theory principles whereas the descriptive tends to support research sites affected by similar policies (Yin 2012). I chose the exploratory case study for my study because it suits the choice of research sites (three township secondary schools). Du Plooy-Cilliers, Davis and Bezuidenhout (2014:80) state that an exploratory case study may be carried out “to become familiar with unknown situations, conditions, policies and behaviours”. My exploratory case study sought to understand participant initiatives on digital literacy and indeed understand different strategies and approaches to their teaching of English as a second language. I did not choose an explanatory case study because of its strong adherence to positivist paradigm notions such as the use of factor theories from a quantitative approach.

However, an exploratory case study has the advantage of studying a phenomenon in specifically chosen environments and participant selection is largely purposive in nature. In my case, I undertook to find views and insights into participants’ (English teachers’) initiatives on digital literacy in township secondary schools. I sought to understand in detail the strategies, approaches and platforms used by English teachers on digital literacy in the teaching of English. The reason for choosing an exploratory case study is simply because it explores participants’ teaching experiences and initiatives in their

natural settings. An exploratory case study of participants' teaching of digital literacy would perhaps give insights into other contexts and provide learning experiences by discovering participants' creative abilities in teaching English as a second language in resource-constrained secondary schools.

In this exploratory case study, I view the research design as my plan of action or road map in my endeavour to discover, through exploration, new ways of doing things (Yin 2012). Through a case study one is able to improve knowledge systems through understanding of the participants' actions in their settings (in this case, township secondary school). As a product of the case study, the researcher and the participants collectively gained insights into how teaching of a second language can be supported by digital connections through integration and collaboration. I used interviews, observations, field notes and document analysis as research instruments to explore participants' initiatives on teaching of digital literacy in English at secondary level.

A case study provides opportunities for the researcher to understand the phenomenon in its context in detail (Flick 2014 b). Although Flick (2014) points out that in case studies research findings may be generalised, it does not outweigh the fact that studying cases may bring insight into how problems can be solved – even in other settings. I selected secondary schools that are resource constrained in terms of computer technology, network connections, financial resources and infrastructure, but accommodate large numbers of learners for the teaching of digital literacy. I was aware of the limitations of a case study design, such as a selection of cases and bias, but choosing resource-constrained secondary schools meant choosing schools in which English is taught as a second language in accordance with the CAPS (DBE 2011) subject classification and categorisation. The case study design helped me to remain focused on schools in townships where digital literacy is taught. The teaching and use of digital literacy was a guideline in selecting participants in this study. According to Yin (2016) the case study approach deals directly with an individual case and its context and gets close to the subject of interest by also getting to the subjective factors such as feelings, thoughts and attitudes. The knowledge constructed is for the particular case and not necessarily for generalisations, although the knowledge can also be used for theoretical elaboration. In my study, the knowledge gained is from teachers and learners at selected secondary schools in the Tshwane North district.

3.5 Selection of participants

3.5.1 Sampling of participants and research sites

Sampling is a research procedure which involves drawing small representative items from a large population. Babbie (2010) says that the two major types of sampling procedures are non-probability and probability sampling. In an exploratory case study research design, sampling is purposive because the researcher targets richer sources of information (Denzin & Lincoln 2005). Purposive sampling is a non-probability sampling procedure suitable for this study, based on the nature of the topic and the researcher's awareness of the target population. My topic explores participants' (teachers') initiatives on the teaching of digital literacy in township secondary schools. The teachers take initiative because they lack resource materials such as computers, laptops, smart phones and reliable digital connections in township settings. According to Creswell (2013) purposive sampling involves researchers to access richer sources of information. Yin (2012) posits that in an exploratory case study, sampling involves richer sources which are sites affected by the syllabus changes. In this case the Tshwane North district affected by the CAPS (DBE's 2011) deployment of syllabus changes involving the teaching of digital literacy. I intentionally selected participants and sites to learn or understand the phenomenon under exploration. In my study, purposive sampling involved my access to English teachers in township secondary schools in the Tshwane North district in order to understand their initiatives/strategies on the teaching of digital literacy.

I sampled resource-constrained (limited supply or access to quality of digital literacy services in communities) secondary schools in townships because teachers at those schools find it difficult to teach digital literacy, as evidenced by first-year university students from the selected schools who struggled with rudimentary digital literacy practices. Participants in township secondary schools indicated that they did not possess the required pedagogic skills to use for teaching digital literacy in English. My interaction with the participants at the teacher centre in Soshanguve also influenced me to explore and understand their initiatives on the teaching of digital literacy in overcrowded classes. English language teachers selected for the study use digital literacy and have a unique context in that they teach the subject as a second language in resource-constrained

environments. English teachers were richer sources of data on pedagogical strategies/initiatives on the teaching of digital literacy in English.

3.5.2 Selection criteria

The unit of analysis involves non-probability purposive sampling based on the researcher's knowledge of the target population. According to Nieuwenhuis (2010) purposive sampling may be used because the selected participants resemble characteristics under exploration. The sample is a dynamic group of English teachers from the Tshwane North district who are involved in the teaching of digital literacy at secondary level. Selection was based on the knowledge of the population, its constitutive elements and the purpose of the study (Babbie 2010, Nieuwenhuis 2010). Selection was based on me having interacted with the participants on issues regarding their teaching experiences and their use of digital literacy. I interacted with the participants at the teacher centre and had informal discussions during cluster meetings on teaching of digital literacy in English. The secondary schools were selected because they were accessible to the researcher and are located in townships where resource constraints are common in schools and the teacher-learner ratio is very high. While the selection was mainly purposive, I also used convenient sampling because of the geographical location of the research sites. The participants that were purposively selected have an intimate knowledge of the teacher initiatives on the teaching of digital literacy in English at secondary level. The selection criteria are discussed in the following sub-sections, namely selection of research sites and selection of participants.

3.5.2.1 Selection of research sites

For the purpose of this study, three secondary schools were selected in the Tshwane North district of the Gauteng province, South Africa. The primary criteria were that the schools selected should be located in a township environment and should experience resource constraints (in acquiring digital equipment and connection). The Tshwane North district is geographically located in resource-constrained environments (Soshanguve and Hammanskraal are predominantly townships). According to Ebersöhn (2017) resource constraint refers to the limited supply or access to quality of services in communities. Resource-constrained schools for this study refer to schools where resources such as text books, classrooms and digital equipment are in limited supply – particularly those located in townships. The profiles of the participating secondary schools and the English

teachers selected for participation in the study are presented in Addendum J. Figure 3.1 shows the teaching and learning conditions in resource-constrained schools.



(Source: <https://www.theguardian.com/world/gallery/2013/may/01/southafrica-f>)

Figure 3.1 Examples of overcrowding in schools at the selected research sites

The schools selected as research sites were characterised by large classes with an average of 60 learners per class. Some of the learners were from informal settlements and poor backgrounds. Informal settlements are geographical locations in Gauteng that are characterised by poor housing, sanitary facilities, poverty stricken people and commonly people with low income levels. Service delivery in the informal settlements is not up to standard and houses are made of make-shift materials such as plastics, broken wooden material, boxes and are built in insecure environments. Some learners from informal settlements cannot afford proper school uniforms or learning materials such as textbooks and writing material. The schools in the informal settlement rely on government for the schools' budget and are usually inadequate for the learners' basic needs. The schools had few computers and limited access to internet connection as well as irregular internet connection. Secondary schools located in the informal settlements use temporary classes that are overcrowded and some of the classes do not have electricity and contain broken furniture. These schools typically employ temporary teachers. I observed that the selected schools were taking initiatives on the teaching of digital literacy in English on the basis of some of their learners' participation on different digital platforms and social media such as WhatsApp, Instagram and the internet. The research sites on the school premises included teachers' subject base rooms, computer centres and register classes. The sites were chosen for interviews and lesson observation purposes. All data collection processes and procedures were conducted on the selected school premises and during working hours.

3.5.2.2 Selection of participants

The selected participants were teaching English at secondary level in township secondary schools. I interviewed experienced teachers who were permanently employed by the schools. I deliberately selected male and female teachers who taught digital literacy in English. Gender was not a variable relating to the participants in this exploratory case study, but participants were chosen based on the social settings of townships where men and women work together. The main reason for choosing English teachers was to gain insights into their initiatives and experiences in the use of digital literacy in English. The digital tools used by participants for this study included cell phones, computers, laptops, smart boards, storage devices and tablets.

I selected English language teachers as participants because they were richer sources of data for my exploratory case study. The selected participants are richer sources of information because they have information on the initiatives they take in teaching digital literacy in English. According to Denzin and Lincoln (2011) purposive sampling advocates for a focus on participants resembling the common attributes of the focus of the study. In this case, selecting English teachers as participants meant targeting sources of data on initiatives and strategies used to teach digital literacy in English township secondary schools. In view of the nature of the phenomenon under exploration, the selection of qualified and experienced participants was meant to provide access to participants who have English language teaching pedagogic awareness. Participants selected were also experienced in planning, execution and evaluation of English language learning programmes. Consequently, the participants provided richer sources of data regarding initiatives and strategies used to teach digital literacy (Denzin & Lincoln 2011). In support of this exploratory case study, the selection of participants in three township secondary schools adhered to this research paradigm's ontology, which advocates multiple realities from multivoiced views (Flick 2014). My reason for choosing three participants from each school was to use multiple data sources in an exploratory case design. I did not aim to make comparisons but to explore current practices, understand policies, conditions, and behaviour of participants in their contexts.

3.6 Data collection methods

For this study I chose semi-structured interviews with open-ended questions, non-participant lesson observations and document analysis as data collection methods as

these are appropriate for investigating human social phenomena in context (Flick 2014). Since the interpretivist-constructivist paradigmatic orientation was used in this qualitative study, it influenced the choice of data collection methods involving human interaction in social contexts. In the context of the interpretivist-constructivist perspective, multiple realities exist and knowledge is socially constructed, therefore interviews are appropriate data collection instruments providing opportunities for human interaction in order to co-construct knowledge in social settings. In this case open-ended questions were used because they allow participants to provide narratives about their experiences and actions regarding the phenomenon under investigation. Participants had to narrate the initiatives and strategies that they used in teaching digital literacy in English. The interview process and procedures are described in detail in the sections below.

Data collection depends on the different instruments that the researcher uses to collect data. Leedy and Ormrod (2010) state that data collection is the process through which researchers gather empirical data from a number of different data sources. The success of the process depends on the method that the researcher chooses for data collection, which is suited to the research study. No one method is better than another, but the success of data collection is dependent on careful selection of appropriate methods. Leedy and Ormrod (2010:105) posit that “the researcher must make the decision about how to acquire and interpret the data necessary for resolving the overall research problem”. To avoid false conclusions drawn from empirical data, more than one instrument was used. Leedy and Ormrod (2010) list four basic fundamental questions about data:

What data are needed? (What data does s/he need?) (What are the characteristics?)

Where are the data located?

Where do you get the data to resolve the problem?

How will the data be obtained? How will the data be interpreted?

As mentioned earlier, I used semi-structured interviews for data collection in this study because it entails detailed narratives about the phenomenon under investigation. English teachers in secondary schools were interviewed and observed while teaching digital literacy.

3.6.1 Semi-structured interviews

The most commonly used qualitative research method is interviews, of which several types exist. These include structured interviews (related to surveys), semi-structured interviews, unstructured interviews, life-history interviews, and narrative interviews (McMillan 2008, Morris 2015). In a case study design, semi-structured interviews are the chief data collection instruments. Morris (2015:3) defines interviews as

the conversation which involves a researcher asking questions and following up on the responses of the interviewee in an endeavour to extract as much information as possible from a person (the interviewee) who has expertise on the topic the interviewer is interested in. This expertise is usually premised on the interviewee having direct experience of the topic under review and produces interview knowledge.

In the context of this study, semi-structured interviews involved an interchange of views and opinions between two or more people on a chosen topic of mutual interest (McMillan 2008). The interviewer for this study sought to extract as much information as possible from the lived experiences and observations. I used topics as guidelines to bring focus to the discussion. The semi-structured interviews used in this study provided me with access to interviewees' memories, understandings, interpretations and perceptions, motives, experiences, reflections and thoughts on the topic and context under investigation (Morris 2015). For an exploratory case study, the context defines how truth is constructed in the community. In my study, participants were interviewed in order to gain their understanding of digital literacy and their interpretation of the role of digital tools in English teaching. The interviews were also used for participants to share their experiences, reflections and motivations on the role of the teaching of digital literacy in a second language to learners in township secondary schools.

The reason for using semi-structured interviews was that they are guided by a set of questions with focus on the aims and objectives of the study. The semi-structured interviews are suitable for a case study design because the questions used are intimately related to the research questions (Flick 2014a). The selected type of interview was useful in that it redirected focus and provided an understanding of the participants' views regarding the phenomenon under investigation. From a methodological point of view, semi-structured interviews are appropriate for a qualitative case study research because it advocates the construction of knowledge on the basis of human interaction (Creswell 2013).

I used semi-structured interviews in order to gain in-depth views on the use and teaching of digital literacy in English. In a face-to-face mode I captured lived experiences communicated through verbal language and supported by body language (Denzin & Lincoln 2011). In this case study, participants told their stories (with nuances) about teaching digital literacy in resource-constrained township settings. Although I had interview questions as guidelines, I allowed participants to narrate their experiences while capturing the details with an audio recorder. I allowed them to express their views and feelings regarding the use and teaching of digital literacy in English. I allowed the participants to narrate their stories while I listened and captured their voices as form of data for the study. The semi-structured questions were just a guideline for the discussions during data collection. The aim was to understand the experiences, expressions and feelings of participants with regards to the use and teaching of digital literacy in English.

The advantage of using semi-structured interviews in my study was that they were flexible, provided an opportunity to access rich personal data, understand individual contexts, and the non-verbal information could also be captured during the interview sessions (Morris 2015). In my study participants were not very keen to discuss their digital competence skills in groups as this seemed like exposing their weak points in English teaching and use of digital literacy. I organised separate interviews for individual participants in their private base rooms in order for them to be free to participate and explain their experiences on how they used digital literacy in teaching English as a second language. Participants became free to share their experiences and views regarding the teaching of digital literacy in English. The use of participants' base rooms also provided an opportunity for participants to express their experiences (in detail) and to present their feelings regarding the teaching of digital literacy in English.

I had a total of 12 sessions of semi-structured interviews. I interviewed participants in groups and other participants were interviewed as individuals. Semi-structured interviews were done three times in groups and for individual participants. I asked open-ended questions and the participants expressed their views by sharing their experiences of using and teaching digital literacy in English. Data were collected on methods and strategies of using digital literacy in the teaching of English in township secondary schools. English language teachers are in direct contact with learners and are expected

to devise pedagogic strategies incorporating digital literacy in the teaching of English, thus providing rich sources of data for the study.

The advantage of using semi-structured interviews is that the researcher can organise several sessions for follow up and member checking. Follow up included questions for clarity, further detail and consistency (Flick 2014b). The interviews were also advantageous because I was able to capture the participants' facial expressions and gestures used to support their explanations. The individual participant interviews provided opportunities for me to record narratives based on open-ended questions and to ask for further detail in cases where participants could elaborate. I was aware of some of the weaknesses of using interviews, such as capturing digressions or sections of narratives that were not relevant to the focus of my study. I recorded everything including detailed aspects of narratives. In isolated cases I would interject and ask a question in order to re-direct focus of the interview and to seek for more detail, examples and elaboration (McMillan 2008).

The interviews were only conducted during official working hours (08:00 to 16:00). I had to conduct the semi-structured interviews during working hours in order to capture events in their natural setting and to comply with the school policy. The conducting of interviews during official working hours clearly indicates that I did not interfere with the setting and operations of the school. I interviewed participants in groups and other participants as individuals. With semi-structured interviews, more data can be gathered for analysis. This type of interview (semi-structured) can be flexible when discussions open up to allow for detailed descriptions and contexts influencing participants to adapt to digital demands. Individual participants' interview sessions provided opportunities for individual attention and getting personalised data (Seidman 2013). When interviewed individually, participants gave personalised data (individual, confidential information) on the initiatives and strategies that they used in teaching digital literacy in English. In such cases participants indicated some sense of being honoured, thereby developing confidence in the significance of their contribution to the study. Semi-structured interviews tend to focus on the aims of the researcher and study resulting in the disregard of other critical information influencing human actions. However, I asked participants if they had any other information that they regarded as important in the context of the study. This provided an opportunity to capture any other critical contextual factors influencing participant decisions and actions on the teaching of digital literacy in English.

Interviews can be regarded as a data gathering instrument which is often superior to others as participants are more willing to talk than to write, and confidential information may be obtained from participants who might be reluctant to put this in writing (Morris 2015). In cases where writing ability is limited, especially in the chosen language, interviews help participants express their views. Interviews also assist with unwritten body language communication that is difficult to capture using the written word. Flick (2014) points out that interviews allow participants to talk freely and with candour, richness, depth, authenticity and honesty about their experiences. The end result is a collection of accounts and narratives, transcripts of conversations and qualitative word-based data to be analysed. I recorded participants' responses using an audio recorder. The result was a record of participants' (teachers) accounts (narratives), conversations and descriptions of the initiatives and strategies used to teach digital literacy in English in resource-constrained secondary schools. Participants were free to express themselves and to share experiences regarding their actions and strategies.

The interview questions in Addendum A focused on how they (participants) used digital technology to teach aspects of English such as grammar, reading, and writing in developing critical language awareness skills. The interview questions explored participants' views on the role of digital tools, digital literacy and constraints in teaching digital literacy in English. Questions on the pedagogical strategies, integration of content and skills in English teaching and learning were asked during interviews. The purpose was to establish how digital literacy was taught in English.

3.6.2 Non-participant lesson observations

The use of non-participant observations in a research study holds several advantages. The researcher's ability to observe critically assists in data collection through identification of informative and constitutive elements of a phenomenon under observation (Seidman 2013). The focus, frequency and length of observation provide a rich tapestry of information collected as data. The researcher needs to be attentive and selective of what to observe. I used an observation guide and it helped me to focus on aspects relating to the focus of the research study. During the observations I observed participants using digital tools such as computers in the computer centre, the strategies that the participants used to teach as well as the challenges faced by participants while executing their duties in English classes.

In this study I observed the participants' actions relating to their understanding of digital literacy concepts, initiatives on teaching and use of digital literacy and addressing challenges in the execution of participant options and opportunities. These observations assisted me to provide answers to the study in a subjective context. Relationships such as congruency on strategies used for social media to teach digital literacy as a writing social practice and understanding the nature of digital texts supported the exploration of teacher initiatives. Affordances and use of images, abbreviated language and emoticons also emerged to support the aims of the study.

Non-participant lesson observation is a qualitative data collection instrument used in education to collect data about teachers' actions and learners' responses in learning and teaching situations (Cohen, Manion & Morrison 2011). I chose to also collect data by observing teachers' actions through non-participant lesson observations in order to support the data gathered during the interviews. The lesson observations were guided by a schedule with questions related to the interviews (cf. Addendum K). The observation guide was used to retain focus of the study during data collection. The lesson observations supported the endeavour to provide answers to the research questions and to understand teacher initiatives on the use and teaching of digital literacy in English. The purpose of observing participants' actions was to link their actions to their beliefs and understanding of the phenomenon.

According to Creswell (2013) observation is a form of collecting data "by observing people and places at a research site". In this study I observed human actions using an observation guide at the research sites (selected schools, classrooms, and computer centres) in order to yield data that were analysed and are discussed in chapter 4. Participant actions that were observed included instructions to learners on the use of digital literacy, demonstrations on the role of digital tools in the learning of English, as well as general attitudes towards the use of digital technology in the learning and teaching of English. I also observed the participants' digital literacy competence, the role of the teacher and the learner, and creativity with the use of digital tools. My responsibility was to capture the actions as data analysis. Human actions are important because they are influenced by the humans' beliefs and are expressions of what the humans think (Yin 2016). In the context of this research, participants' actions during digital literacy classes or on digital literacy platforms reflect the participants' understanding and strategies for teaching digital literacy in English.

I made appointments with the participants whose English lessons were to be observed. I observed six English lessons by three participants using digital literacy for teaching and learning during these lessons. I thus observed two English lessons of 35 minutes for each of the participants and recorded their actions. I selected four participants who were actively using and teaching digital literacy in their English classes. The selection had nothing to do with gender bias as indicated earlier. I explained my role during the lesson observations and indicated that I would audio record the lessons. I made the observation guide available to the teacher and indicated the purpose for undertaking the exercise. I also indicated that I would be taking down notes.

I attended the English lessons and recorded without being involved in the activities of the participants (non-participant observations). Participants objected to be video recorded and I had to comply with their request and only audio recorded the lessons which lasted for only 35 minutes. I also sat in the computer centres where English teachers used digital tools to teach aspects of English while recording the activities with an audio recorder as the participants indicated that they preferred that their lessons were not recorded on video. I used a checklist with key issues to be observed such as the participants' views of digital literacy based on their actions, the strategies and roles of digital literacy in English teaching and the challenges faced by participants in using digital literacy. I also observed the strategies (pedagogic initiatives) used by the participants to overcome challenges regarding the teaching of digital literacy in English.

I made observations without interfering with the participants' teaching or the learner's activities. My movements were limited during the lesson observations to avoid disrupting or interfering with the lessons. My role was to focus on capturing important information on the participants' actions but at the same time maintaining a friendly, passive and respectful relationship with the participants (Creswell 2013). The focus was on initiatives used to teach digital literacy in English. I recorded any strategies used to teach digital literacy that were not prescribed in the CAPS document (DBE 2011).

3.6.3 Document analysis

In a case study design, document analysis can be used to triangulate interviews and observations (Denzin & Lincoln 2011). In view of the assertion above, documents were selected on the basis of their ability to communicate matters relating to the participants' teaching and use of digital literacy (Flick 2014). Documents were analysed to understand

how they support the views mentioned during the interviews. The guiding idea in the use of documents is the view that part of our daily lives leave traces in official and unofficial documents (Flick 2014). In this study, I asked for access to lesson plans and work schedules to see whether the documents covered the planning and organisation of digital literacy activities. I also asked for access to digital devices and documents typed by learners, instruction sheets and texts on participants' smart phones. I had to kindly request participants to provide documents developed on digital facilities in order to understand how group tasks were completed using online facilities or social media. In other instances, I asked the owners to open sites or documents for me to view on their own devices in order for them to remain in control of the content on their devices. I need to mention here that getting access to individual smart phones is difficult.

According to Flick (2014b) one way of understanding human behaviour is to unobtrusively examine their written texts. I examined WhatsApp messages, e-mails, teaching notes saved on smart boards, and videos saved and circulated on social media. The aim was to understand teacher initiatives/strategies on the teaching of digital literacy in English. However, some texts were written in isiZulu and other African Languages. As I do not understand these languages, I had to rely on translations and interpretations of these texts by the participants. This process involved switching from one language to another in search of meaning and understanding of how communication takes place in multilingual contexts. The selected documents for analysis were useful in attaining the research aims. Creswell (2013) says that documents provide valuable information in helping the researcher with the important aspects that are central to the phenomena in qualitative research. The documents (which included electronic documents) serve as richer sources of information on how digital literacy is taught in English. Documents also provide tracks of human actions in the digital literacy landscape.

Document analysis was used to get information that would help me answer my research questions and achieve the aims of the study aim. While Silverman (2016) contends that documents can be analysed for different purposes, I focused on documents that contribute to the construction of knowledge on how digital literacy is used in teaching English. In this case, I focused on literacy practices that depict teacher initiatives that improve the teaching and learning of English as a second language in township secondary schools.

Although I also experienced challenges reading documents which included abbreviated language, emoticons, images, and abbreviated texts, I requested the participants to clarify what the images or abbreviations meant, as some of the images, emoticons and abbreviations did not have universal meanings. An analysis of the documents would indicate whether these were created as group work, individual work, work done on social media, documents printed and used as secondary sources, internet web links or work saved on external/storage devices. The focus was to understand how the documents support participants' claims of the use of digital tools. As mentioned earlier, data were recorded using an audio recorded and written field notes captured during interviews and observations. I made field notes that were related to the focus of the study. The data provided insights into the strategies used by participants on the teaching of digital literacy. The data were used as input that was processed to yield answers to research questions.

Table 3.1 below is visual representation of the data collection instruments and how each relates to the research question of this study.

Table 3.1 Data collection methods related to research questions

Data collection method	Related research question
Semi-structured interviews	<p>How do teachers teach digital literacy in English in township secondary schools?</p> <p>What digital literacy initiatives do teachers take in teaching English in township secondary schools?</p> <p>What are the teachers' strategies in teaching and using digital literacy in English?</p> <p>What challenges are faced by teachers in teaching and using digital literacy in English?</p>
Non-participant observations	How do teachers adapt their classroom practice in order to teach digital literacy in English?
Document analysis	How do teachers teach digital literacy in English in township secondary schools?

3.6.4 Field notes

Field notes refer to writing, sketching, and drawing done by the researcher during the data collection stage of the study. According to Yin (2016) field notes do not only refer to brief jotted notes but include pictures, videos, and audio recordings relating to the study.

It is not easy to record everything, particularly when the researcher uses hand written notes, so there is a need to develop a short hand or apply note-taking skills (Yin 2016). At every stage of the data collection process I took notes on a writing pad after I had informed the participants that I would be doing so as part of data collection. I captured actions in words and recorded participants' facial expressions. I captured the field notes in a specific format. I started by recording the date, time, topic of focus for the day and participant's details as well as the research site. Yin (2016) says that the format helps the researcher to remember and to understand the narrative as it was told by the participants. The data collected during the observations were recorded as audio recordings and written field notes (Creswell 2013).

I used abbreviations, acronyms and sketches in capturing participants' views and actions. At the initial stages of data collection it was difficult to do the audio recordings, ask semi-structured questions, record the participants' views and actions on a writing pad, and also remain focused on the participants' narratives. However, after the first few sessions it became easier. My field notes included capturing use of body language, repeated words and expressions for emphasis, reference to relevant environmental aspects, and texts that were used for digital literacy practices. The field notes helped me to remember how incidents were narrated. In other cases, field notes provided clarification and verifying the data collected. The process of taking field notes required an understanding of the research questions in order to stay focussed and make brief comments to support interpretation of the data.

3.6.5 Data documentation

Data recorded included the strategies and initiatives that the participants took in the teaching of digital literacy in English. I recorded the methods such group work, individual work activities, digital literacy tasks, intended outcomes, learner roles, and the teacher's use of digital tools in the teaching of digital literacy. I also recorded participants' proficiency on the use of computers and the strategies used to overcome challenges. Recording involved capturing the participants' roles in managing group dynamics, the software used, social media platforms used, topics discussed, sharing of computers, connecting learners to learning sites and English language learning through online resources. I also captured learner activities and how the participants managed the

learners and other general classroom management aspects in digital literacy classes and discussions.

The data collection process involved taking down notes, sketches and writing narratives. During interviews I recorded the narratives with an audio recorder and supported the recordings by writing down the narratives and recording my interpretation of body language linked to the issue under discussion. In cases where illustrations were used by participants I used tables and diagrams/mind maps to show relationships and links in the data. Yin (2016) recommends the use of recordings because they provide permanence and allow the researcher to experience the proceedings repeatedly. The repetition helps with refocus and opportunities for amendments and modifications before drawing final conclusions. Each field day would end with revisiting the written/recorded field notes, replaying of the audio recordings and understanding of the participants' captured explanations. I used the replay to make corrections, improve understanding and clarify initial interpretations of the data. The audio recorded data were transferred to a compact disc for record keeping. I also noted the types of tasks completed by learners and the topics discussed online by teachers and learners.

According to Flick (2014b) "field notes are immediate recordings by the researcher during interviews or observations". Although field notes may be subjective depending on the selectivity and the researcher's focus, I recorded most of the actions relating to teaching and the use of digital literacy in English. I also recorded key points mentioned during interviews using bullet points and captured pictures, diagrams, screens shots of conversations, and images that were used during online discussions.

The field notes included phrases, statements, explanations, descriptions, numerical values, and tables containing information about the initiatives and strategies used to teach digital literacy in English. The bio-data was tabulated as indicated in Addendum J. The research sought to find patterns, relationships, congruency and disagreements in human actions using interviews, observation, transcribed data and document analysis.

3.7 Inductive thematic analysis

So many different methods of data analysis exist, such as grounded theory analysis, ethnographic data analysis and case study data analysis (Creswell 2013), using deductive or inductive analysis. For this study, I used inductive thematic analysis, which

involved procedures and processes leading to meaning-making by both researcher and participants (co-construction). The aim of data analysis is to reduce, organise, interpret and substantiate data. Data analysis involved coding, sorting, coalescing, and populating it according to themes and patterns at the end of field work. The above procedures are explained in detail in the sections below.

In a general sense, inductive data analysis involves moving from specific participants' views to general trends and patterns on a phenomenon (Flick 2014). This means that the views of individual participants are broken down into units and then sorted and reconstituted/organised for interpretation. I used inductive thematic analysis because it is appropriate for a qualitative explorative case study through an interpretive-constructivist philosophical lens. Data collected from individual participants and group views were populated to form one theme. However, there are other methods such as content analysis, discourse analysis, multimodal conversational analysis, and semiotic analysis, but could not be used for this study because of the nature of the topic and the defining methodological parameters in an exploratory case study. In this qualitative case study, data collection and analysis were done concurrently (*in situ*) because qualitative procedures are flexible. Walliman (2011:132) contends that

data reduction through coding, clustering and summarising provides the first step to simplification followed by arranging compacted data into diagrams and tables which can display the data in a way that enables one to explore relationships and gauge the relative significance of different factors.

In view of the above assertion, the process is designed to make meaning of the collected data that will be communicated in the final report. In this study, the first step was to prepare for the transcription of audio data into written form. I played the audio recording and transcribed the audio data into written form. In this process, transcription meant the graphic representation of selected aspects of verbal, prosodic and paralinguistic behaviour converted to the written form (Flick 2014). Transcription includes description and coding to produce a transcript. During the transcription stage I used notations (set of signs used to represent selective aspects of the behaviour of participants). I wrote some of the transcriptions on paper and some of the participants' views were typed for easy coding and sorting. The process resulted in expanded form and variety of data for analysis and interpretation. The procedures are described in detail in the sections of this chapter below.

Data collection is not an end in itself, but is a step towards analysis so that it makes meaning (Flick 2014). It involves summarising, a process that includes condensing, making meaning, organising and re-arranging ideas in line with the research paradigm of the study. So, after making the transcriptions, I grouped together views relating to the understanding of digital literacy, and data relating to the use of social media in teaching and learning English as a second language. I summarised the long narratives from the interviews and re-arranged the ideas in some chronological format. This re-arranging involved collating and aggregating similar views by different participants from different research sites.

According to Flick (2014) data analysis is the classification and interpretation of linguistic material (including visual) to make statements about implicit and explicit dimensions and structures of meaning-making (from cases) in the material and what is presented therein. Meaning-making can refer to subjective or social meaning. The broad aim of qualitative data analysis is to describe a phenomenon in detail. For this study, the aim of data analysis was to understand subjective, individual or group experiences on digital literacy in teaching English (Flick 2014a).

Following the above guidelines, I had coalesced and combined ideas belonging to a similar set in order to help describe the teaching of digital literacy in English. In this process, I compared participants' views and took note of similarities in their stories and strategies. I chose this type of data analysis as themes emerge from coded and classified data. The process involved disassembling and reassembling data resulting in emerging patterns (Yin 2016). I elaborate on detailed procedures for analysis in the sections on data analysis procedures.

In a case study design data collected through interviews are analysed using themes and patterns emerging from narratives about the participants' experiences. I organised data according to four broad themes (inductive thematic analysis) culminating from the features and characteristics and nature of the data collected. The emerging themes and patterns broadly provide answers and explanations to research questions.

This study focused on incidences of the use of digital literacy in English lessons, the presence of digital tools, as well as participants' presence on learning platforms and the frequency of use of digital literacy in English language lessons. Lesson observations supported interviews thereby checking consistency and providing data for analysis. This

was done through the correlation between interview responses and the observed frequencies from the participants' actions.

As mentioned earlier, data analysis (inductive thematic analysis) for a qualitative case study begins and proceeds with data collection. The analysis process helped me to arrange data according to themes, categories and sub-categories according to the procedures described below.

3.7.1 Data analysis procedures

Data analysis procedures refer to steps taken in organising and reducing data to meaningful units. As mentioned earlier, data are analysed according to certain guidelines. I used Creswell's (2013) framework to analyse the data. Creswell (2013) says that the process of data analysis in qualitative case study research is not off-the-shelf, but rather custom built, revised and choreographed. Analysing data creates an opportunity for a researcher to transcribe, read, categorise and develop themes in preparation for analysing and presentation of the findings of the study. In line with this study's epistemology, ontology and methodology, interpretivist-constructivism actively contributed in guiding the data analysis as I interacted with the data in constructing knowledge about a social phenomenon through human experiences.

While reading and reflecting on the data, I made notes in the margins and started sorting the data by interpreting, classifying and describing the data. In this process I established themes in context and compared data from the different research sites, and responses by the different participants. I used coding (a key feature in qualitative case study design) to distinguish data from different participants and sites. This is an interrelated process which takes place simultaneously and represents what Creswell (2013) calls the data analysis spiral – analytical circles rather than in a linear process.

I used "P" to represent teachers as participants and a numerical value such as "1" to represent the participant's identity. I used ticks (√), asterisks (*), question marks (?), hash tags (#), arrows and bullets points to organise and code the data. Ticks represent ideas related to understanding and awareness of digital literacy in English language teaching, while asterisks represent ideas on teachers' initiatives and strategies regarding the use and teaching of digital literacy. The notations indicate relationships with data and organising them into meaningful unit was made easier because similar symbols

expressed some commonality. For example, all hash tags represent ideas that are related and subscribe to the same theme. According to Du Plooy-Cilliers et al. (2014) line-by-line coding using notations in inductive data analysis helps data saturation (when no new codes emerge from the collected data). The notations helped me to develop the themes, sub-themes and categories as shown in chapter 4. Once the data were coded, I was able to proceed to categorise the data. The categorisation process involved putting similar codes together to communicate sense and subscribe to a concept. In other instances, I used codes developed from the participants' comments captured during interviews. For example, the idea of 'social media pedagogy' was a result of the nomenclature used by participants to describe their use of social media to discuss academic issues with learners on social media platforms. I later used the axial code in order to establish the connections within and across categories as indicated in chapter 4.

Once the categories were established, naturalistic generalisations guided grouping of ideas into themes such as the use of visuals for teaching and using digital literacy in English, and the role of cartoons, images and abbreviated language code. Common ideas and related concepts collate to make a theme. In support of data reduction during analysis, Creswell (2013) states that data analysis involves aggregation of ideas and meaning-making that can be applied even in other situations. The data analysis yielded themes relating to strategies and initiatives used by participants in teaching digital literacy in English. The analysis also involved clarification of captured details to gain congruency – especially when the written narratives would contradict the audio recordings. I had to revisit the field notes and play the audio until an informed understanding was achieved. This brought rigour to the research process.

Data analysis is a recursive and iterative process. Data collection feeds into data reduction which summarises data into themes, thereby giving it meaning. The themes and patterns form part of what the data communicates. Conclusions are not final because they also inform the data collection process by indicating grey areas on the data collection and the data itself. As mentioned earlier, data collection for me involved taking down notes, audio recording participant actions while data reduction included summarising without compromising important details and putting together related ideas to form a theme. Reduction also involved combining repeated views into one idea and joining similar views from different participants. My data analysis process was recursive and iterative. The process helped in managing and organising data and developing

themes (Creswell 2013). The process of managing, organising, reading, memorising and describing during and after data collection is what makes up the data analysis spiral referred to earlier. The whole rigorous data analysis process helped me to attain trustworthiness for the study.

3.8 Trustworthiness

Trustworthiness is a research quality issue – “How can an inquirer persuade his or her audiences that the research findings of an inquiry are worth paying attention to?” (Lincoln & Guba 1985:290). Credibility, dependability and confirmability are the key criteria for trustworthiness in a qualitative research study (Lincoln & Guba 1985).

3.8.1 Credibility

Credibility refers to the accuracy with which I interpreted data provided by participants. According to Anney (2014) credibility is defined as the confidence that can be placed in the truth of the research findings. In this research study, credibility establishes whether or not the research findings represent plausible information drawn from the participants' data and is a correct interpretation of the participants' views (Anney 2014). In a qualitative case study research, credibility is attained through rigour of the inquiry and adopting strategies such as prolonged stay in the field, reflexivity, interview technique and structural coherence. For this study, credibility was increased when I spent more time with the participants in the field in order to understand them better and gain insights into their lives (Du Plooy-Cilliers et al. 2014). In order to bring about credibility in my study, I interviewed participants three times and spent an hour on each interview session listening to participants' views regarding the initiatives they take on the teaching of digital literacy in English. By ensuring credibility of the presentation of the findings, I presented the voices (multivoiced) of the participants representing their views, beliefs and feelings (with nuances) of the phenomenon under exploration.

3.8.2 Dependability

Dependability refers to the quality of integration and stability of the findings over time (Bitsch 2005). In this study dependability involved the evaluation and interpretation of the outcomes and to ensure that all conclusive elements are supported by the data collected in the study. According to Anney (2014) dependability is established using an audit trail, a code-recode strategy, stepwise replication and triangulation. For an audit trail, I

accounted for the whole research process and the critical decisions made during research. The steps are briefly discussed. I did not seek to generate a theory from my data, but my choice of the interpretivist-constructivist paradigm influenced the choice of the research approach (qualitative), the research design (case study), the data collection methods (semi-structured interviews, non-participant observation, document analysis and field notes), and the data analysis method (inductive thematic data analysis). This research process brought dependability as each step and methodological choice is informed by the paradigm and adheres to the dictates of the recommended procedures (Koonin 2014). Ensuring dependability contributes to the trustworthiness of the study.

3.8.3 Confirmability

Confirmability refers to how well the data collected support the research findings as well as the interpretation by the researcher. Confirmability refers to the degree to which the results of an inquiry could be confirmed or corroborated by other researchers (Anney 2014). In view of this research endeavour, confirmability concerns itself with establishing that the data and interpretations of the research findings are not figments of the researchers' imagination but culminate from the data collected (Tobin & Begley 2004). I used visible evidence-extracts from social media conversations and discussions, interview excerpts and audio recorded transcriptions to maintain a clear audit trail. Confirmability contributed to the trustworthiness of the study.

3.8.4 Triangulation

Triangulation is critically important in contributing to trustworthiness of a study. Babbie and Mouton (2001) contend that triangulation is generally and essentially the best and ideal strategy to attain confirmability in a qualitative case study. The triangulation process involves the use of multiple investigators, methods and theories to obtain corroborating evidence (Onwuegbuzie & Leech 2007). Theoretical triangulation supports the analysis because the learning theories used in the study incorporated a variety of data collection methods complementing each other. Yeasmin and Rahman (2012) indicate that triangulation provides more comprehensive information. Triangulation reduces bias by cross-examining the integrity of participants' views. Anney (2014) says that there are three triangulation techniques namely: investigator multiplicity which brings different perceptions, data triangulation that uses different sources and methodological triangulation which utilises different research methods. I used data triangulation by

selecting sources which include English teachers as participants, documents, computer centres, social media chats and information storage devices.

3.8.5 Transferability

In a qualitative case study research, transferability refers to the extent to which the results can be transferred to other contexts with different participants. In support of the views above, Tobin and Begley (2004) say that transferability is the interpretive equivalent of generalisability. In describing the inquiry and selection of the participants, the researcher brings about transferability in the study thereby building up trustworthiness. Transferability involves developing thick descriptions and purposive sampling as mentioned earlier in this chapter. For this study, I recommend that any attempt to apply the research findings to other situations should critically consider the contextual factors such as resource constraints, teaching of English as a second language, and policy recommendations on the teaching and using of digital literacy in English. However, it is important to note that the primary aim of qualitative case study is not to seek generalisability as implied in positivist terms, but to seek an understanding of conditions and new practices in the use and teaching of digital literacy (Denzin & Lincoln 2011). This does not mean that the findings cannot be applied to similar settings, but can be applied using similar qualitative research procedures with the support of the interpretive-constructivist perspective. I did not seek to generalise the findings, but the study may be replicated in similar circumstances.

3.8.6 Crystallisation

Crystallisation is a temporal suspension of examination/reading data (immersion) in order to reflect on the analysis experience and make an attempt to identify patterns. Richardson (2000:934) proposes a

crystal as that which combines symmetry and substance with an infinite variety of shapes, multidimensionality and angles of approach. Crystals change, alter and make prisms reflecting externalities as well as refracting within themselves to produce colours, patterns and arrays in different directions. So, what we see depends on our angle of repose.

In this exploratory case study, crystallisation was achieved by the use of the multiple types of data collected using different methods, thereby bringing rigour and consistency to the study (Ellingson 2009). In my study, multivocality also supported crystallisation

through use of multiple voices from participants who teach digital literacy in resource-constrained secondary schools. The multidimensionality was also attained through data that were collected from teachers of different age groups and varying levels of qualifications and experience in the teaching of English at secondary level. Based on the views of Richardson (2000) and Ellingson (2009), multidimensionality (understanding a concept from different angles) as an approach to digital literacy in English teaching was used to understand the strategies and teacher initiatives in teaching. However, crystallisation and multivocality do not mean compromising ethical considerations and how the study attempted to adhere to them. This takes the discussion to ethical considerations in my study.

3.9 Ethical considerations

Ethical issues in qualitative research refer to a set of beliefs and moral judgements guiding the researcher (Resnik 2015). Ethical practices are also guided by the research paradigm, research design, methodology and instruments used to gather, analyse and interpret data, and present findings. Research should not disrupt the beliefs, values and practices held by participants and their communities. The social order must remain after researchers have collected data and published results. In this study, I adhered to the ethical code of conduct as stated and recommended in the University of Pretoria's research ethics code and guidelines and those of the Department of Basic Education in South Africa. The key ethical considerations relating to my study are briefly discussed below.

3.9.1 Procedures for entry into the research sites

I submitted an application for ethical clearance to the University of Pretoria's ethics committee. In this application I indicated how I would deal with issues such as confidentiality of data, consent of participants, permission, and procedures during and after the data collection. I also indicated how I would deal with vulnerable groups (which did not apply to this study). The application for ethical clearance was approved, thereby giving me permission and access to research sites and participants, and to continue with the research.

I also submitted an application to undertake a research study with the Gauteng Department of Education. The application included information and details on the nature and purpose of my study, study sites, participants' rights, privacy and confidentiality of

information and the protection thereof. This application was also approved once the requirements were met. The approval was granted with certain ethical conditions such as the use of consent letters and letters of permission from the Tshwane North district. The guidelines also strongly recommended that the research should be concluded within the approved time frames and that the code of conduct be applied during data collection and reporting on findings, and that the selected sites approved for the study be used for data collection. This is why I had to negotiate interview sessions and lesson observations conducted during working hours at the school premises.

I proceeded to make appointments with the principals. I met the principals at their respective schools and gave a brief description of the study and what it aimed to achieve. I indicated the required participants and their role in the study and the duration of the study. I provided participants with a detailed description of the study and procedures. I indicated that the participants' names would not be used in the final report but that I would use pseudonyms and that the participants would remain anonymous. I clearly indicated that the participants were free to withdraw their participation at any stage of the study and that no consequences would befall them. It was important to make appointments to visit participants in order to prepare them and not disrupt their programmes for the day (Morris 2015).

3.9.2 Ethical considerations during data collection

I kept to the dates and times for interviews and lesson observations as agreed to by the participants to avoid disrupting the participants' teaching programmes (Creswell 2013). I began by giving a description and purpose of the study as an introduction to the interviews and then indicated that I was going to use open-ended questions during the semi-structured interviews (Morris 2015). I also stated that I would audio record lessons and make field notes during the interview sessions. I explained this in a bid to build trust and confidence with the participants (Creswell 2013). I dressed professionally and used formal language during the meetings with the participants in order to show respect to the participants. I was clear and straightforward to avoid any misunderstanding and confusion.

3.9.3 Anonymity and confidentiality

Anonymity and confidentiality in research studies refer to control of the use of information provided by participants (Wiles, Crow, Heath & Charles 2008). In support of confidentiality, Wiles et al (2008) say that anonymity involves removing identifiers such as names, addresses, telephone numbers or any other records linked to the participants. For this study, I assigned pseudonyms to each participant in order to maintain anonymity. The actual names of the schools, teachers and learners participating were not used in order to achieve anonymity. In relation to anonymity, confidentiality refers to treatment of information disclosed in trust by participants on the expectation that it would not be divulged. Oliver (2003) says that confidentiality is being akin to the principle of privacy. In order to attain confidentiality in the data collection process, I explained the purpose of the research study and what it aimed to achieve before embarking on data collection. I requested the participants to read and sign the informed consent forms as part of the research procedure. I then proceeded with the data collection. I made available all the data collected and asked participants if they wanted to make comments regarding what they had said during interviews or my reports on the lesson observations.

I adhered to the confidential information agreement by not divulging information to anyone except those directly involved in the study. After collecting the data, I indicated how the data would be used in the study and that the final report would be made available before publication to allow participants to comment (Flick 2014a).

The table 3.2 summarises the discussions in this chapter.

Table 3.2 Summary of key issues discussed in chapter 3

Research question	How do teachers teach digital literacy in English in township secondary schools?
Sub-questions	What digital literacy initiatives do teachers take in teaching English in township secondary schools? What are the teachers' strategies in teaching digital literacy in English? What challenges are faced by teachers in teaching digital literacy in English?
Epistemological paradigm	Interpretivist-constructivist – knowledge is socially constructed through human interaction.
Research approach	Qualitative research study – studying the meaning of people's lives as experienced in the real world such as teacher initiatives on digital literacy in the English.
Research design	Exploratory case study – studying a phenomenon in specifically chosen environments. A step-by-step process of data collection and analysis that aims to

	gain better understanding of human practices in social settings (Saunders et al. 2012).
Selection of participants	Purposive sampling – the Tshwane North district has resource-constrained township secondary schools and teachers are taking initiatives to teach digital literacy in English.
Data collection	Interviews – open-ended group and individual interviews. Observations – non-participant lesson observations. Document analysis – lesson plans, work schedules, learner activities, texts and images used and produced using digital tools.
Data analysis	Inductive thematic data analysis – data coding, organisation and descriptions according to themes and patterns (Flick 2014a).
Quality criteria for the study	Trustworthiness – Worthy topic, credibility, rich rigour, sincerity, resonance, significant contribution, ethical and meaningful coherence (Tracey 2010).
Ethical considerations	Used consent forms, adhering to DBE ethical code of research and using the interview protocol approved by their ethics committee and that of the University of Pretoria. Keeping to the agreed time frames and making all forms of data collected available to participants.

3.10 Conclusion

Research paradigms play an important role in informing research design and methodology in a qualitative study. All research functions are guided by the research paradigm in line with the research questions and aim. Chapter 3 contributes by providing a step-by-step road map for the entire research process. It accounts for the researcher's actions and choices regarding the exploration of participants' initiatives/strategies on the teaching of digital literacy in English. In some way, it provides the way in which insights and answers to research questions were answered, thereby attaining higher levels of trustworthiness in the research. In the chapter I discuss the philosophical underpinnings, research design, methodology, data collection instruments and analysis process. I also discuss the interpretivist-constructivist paradigm and how it supports the study in understanding teacher initiatives on digital literacy in English. The discussion also explains the choice of the research approach (qualitative) and the research design (exploratory case study). The choice of the approach and design helped inform the discussion on the methods/instruments for data collection as well as selection of participants and data analysis process. In the next chapter I present the analysis of the data and the findings of the research.

CHAPTER 4: FINDINGS AND DISCUSSION

4.1 Introduction

In chapter 3 I discussed the research methodology and procedures used to collect data for the study. In chapter 4 I provide the findings, discussion, and interpretation of the findings on the basis of an inductive thematic analysis. The findings are presented in four themes with sub-themes and categories followed by an interpretation of the sub-themes. A brief description of the participants foregrounds the findings, and the views of the participants regarding the teaching of digital literacy in English are presented. Findings presented provide answers and insight into the research questions and are guided by the interpretivist-constructivist perspective. The chapter is concluded with a discussion of the findings.

4.2 Description of participants

The participants in this study comprised of English teachers employed by the Department of Basic Education in Gauteng secondary schools. Participants were qualified (have formal qualifications in teaching English at secondary level) and experienced in teaching English as a second language. The selected teachers were all teaching digital literacy in English at secondary level under relatively similar conditions. The schools were located in a township environment, with overcrowded classes, lack of access to sufficient digital tools and reliable internet connections. As mentioned in chapter 3, the participants were given pseudonyms as indicated in the table.

Name of school	Name of teacher	Sex
A	Mr Phala	M
A	Mr Mafoko	M
A	Mrs Zuki	F
B	Mr Mudau	F
B	Mrs Nkabinde	F
B	Ms Sithole	F
C	Mr Baloyi	M

C	Ms Vuma	F
C	Mr Mathe	M

Nine teachers participated in the study. The data collected from the participants were organised into themes, sub-themes and categories.

4.3 Summary of themes, sub-themes and categories

Four themes resulted from the analysis of data on teachers' initiatives on the teaching of digital literacy in English in resource-constrained township secondary schools. Theme 1 presents the teachers' **understanding** of digital literacy, theme 2 shows **strategies and approaches** used to teach digital literacy, theme 3 presents **challenges** faced when teaching digital literacy, and theme 4 shows the strategies used to **improve** the use and teaching of digital literacy. The broad themes are divided into sub-themes as an attempt to categorise the main findings from the study. The themes emerging from the data help to provide answers to the research questions and close the research gap evident from the reviewed literature discussed in chapter 2. In the process of providing answers and insight, the study confirms that the use of social media for learning, the role of collaboration and networking, the use of online resources and electronic writing strategies discussed in chapter 2 help to indicate how the same strategies are used in resource-constrained township schools for teaching English. Table 4.1 summarises the findings according to the four themes and sub-themes.

Table 4.1 Themes, sub-themes and categories

Theme 1	Theme 2	Theme 3	Theme 4
English teachers' understanding of digital literacy in English	Strategies and approaches used to teach digital literacy	Challenges faced when teaching digital literacy	Strategies for improving the teaching of digital literacy
Sub-theme 1. Stipulations from the Department of Basic Education	Sub-theme 1 Use of computers as tools for English language teaching Sub-theme 2 Digital innovative practices Sub-theme 3 Use of social media in teaching English Sub-theme 4 Use of social media connections	Sub-theme 1 Shortage of digital devices and skills for teaching digital literacy Sub-theme 2 Vandalism of digital equipment and cyber bullying Sub-theme 3 Cyber linguistics	Sub-theme 1 Training and improving attitudes towards the teaching of digital literacy
Categories	Categories	Categories	Categories
1. National policies and guidelines on digital literacy 2. School policies on digital literacy in English	1. Cartoon and magazine club 2. Educational games in English language learning 3. WhatsApp group communication for digital literacy in English	1. Limited digital devices available for teachers and learners 2. Vandalism 3. The challenge of software damages 4. Cyber linguistics in English language learning 5. Visual images	1. Training and pedagogical guidelines

4.4 Theme 1: English teachers' understanding of digital literacy

The first theme that emerged from the data analysis is teachers' understanding of digital literacy in the teaching of English in township schools. In this study the word "understanding" refers to what the participants view certain concepts like digital literacy to be. In support of the theme sub-themes emerged and include the input from the Department of Basic Education policies and recommendations as well as participants' general understanding of digital literacy in social circumstances. The categories under this theme are the schools' policies and recommendations and the practices on the teaching of digital literacy as agreed to by the schools' departments of English. From the data collected during the semi-structured interviews it is clear that participants

understand the concept of digital literacy in many different ways. Participants from school A understand digital literacy as the integration and use of computer technology for teaching and learning. Mr Phala said:

I use digital tools to teach parts of speech in English and to do research for English literature teaching and related concepts such as plot, characterisation and themes. I also use them for checking spellings in dictionaries, sentence structures and verb tenses. Yes, aaah and also to play games.

At school A Mrs Zuki said:

I understand digital literacy to mean an ability to read, interpret, analyse and use information presented via computers. Ooooh yes, I understand digital literacy to mean also an ability to write on electronic surfaces or screens and transfer of information from one source to another using an internet connection.

At school B participants understand digital literacy to mean the use of computers for school administration purposes and PowerPoint presentations for lesson delivery. Mr Mudau stated as follows:

Ok, right, I use computers to capture learners' marks, create English lesson slides and to keep important school documents for ease of access and transfer to colleagues.

At school C Ms Vuma said:

Eeh ummm [clearing voice], digital literacy is a social practice which involves searching for information from the internet. I also see it as interpreting the information and making meaning of what I see and read. Some of the information may not be true or factual while some of the information is helpful to both myself as the teacher and the learners. The information that I find from the internet sources help my learners to do discourse analysis and to apply the knowledge and skills to other fields of learning.

Collectively, participants indicated that digital tools were used for communication, interpretation, transfer of information and understanding different parts of speech in

English. However, participants' understanding was within the stipulations from the Department of Basic Education on digital literacy.

4.4.1 Sub-theme 1: Stipulations from the Department of Basic Education

Participants' understanding of digital literacy is informed by the policy frameworks and guidelines on the teaching of digital literacy in secondary schools. Category 1 stipulations are the guidelines from the Department of Basic Education while the schools' guidelines and regulations regarding the use and teaching of digital literacy in English are presented as category 2.

4.4.1.1 Category 1: National policies and guidelines on the teaching of digital literacy

All participants understood the stipulations on digital literacy in English as prescribed by the Curriculum and Assessment Policy Statement (DBE 2011). Apart from these stipulations, the different schools and Departments of English at these schools have their own policies that guide teacher actions.

Mrs Nkabinde said:

The Department of Basic Education stipulates that digital literacy should be taught and recommends the use of online digital facilities such as Facebook, Instagram, WhatsApp, Twitter, Internet and other social media platforms for teaching of English in secondary schools.

Mr Phala stated that digital literacy and the use of digital tools provided resource materials for teaching and learning English as a second language. Mr Phala said that the aim of teaching digital literacy was to improve English language proficiency and access to information stored in electronic and digital storage systems. To support his views, Mr Phala presented a copy of extracts from the Department of Basic Education's aims (Figure 4.1).

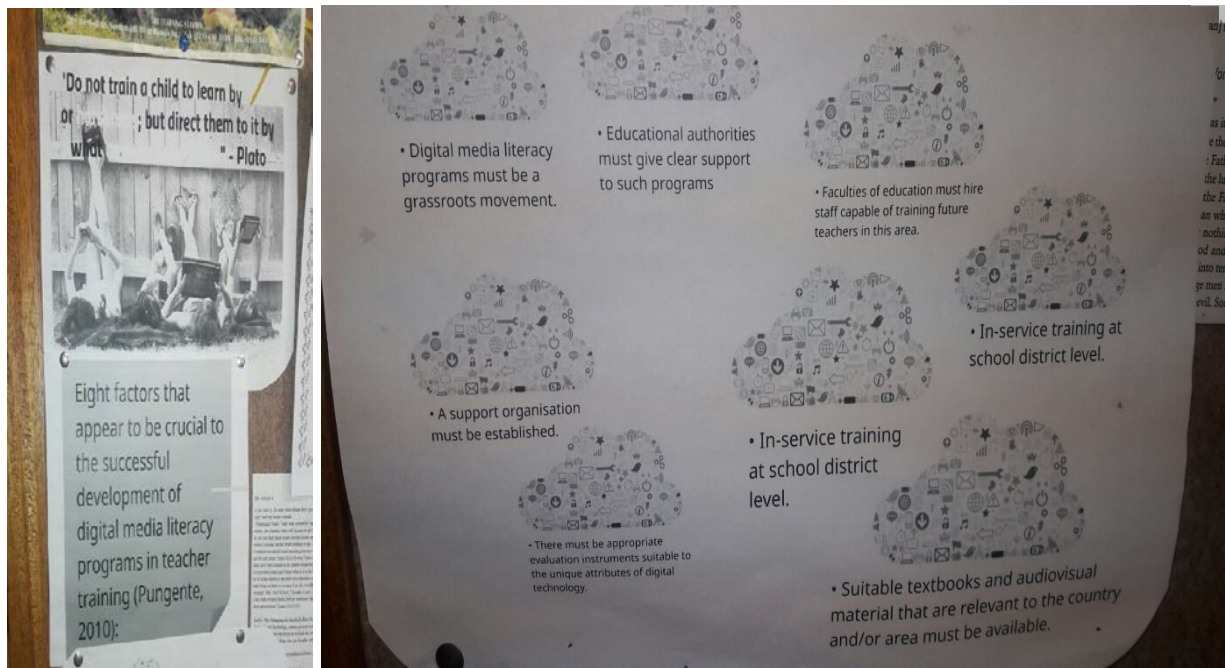


Figure 4.1 Eight factors crucial to development of digital literacy

P1 said:

I use the eight factors to guide me in implementing the use and teaching of digital literacy in English especially on the recommendations of government and related institutions. I also believe and understand that in-service training can improve the skills of teachers on the pedagogic requirements for digital literacy.

Ms Sithole said that the Department of Basic Education provided training for e-learning and not for digital literacy:

I only attended a workshop training conducted by the Department of Basic Education (e-learning unit) which provided skills on computer literacy. When they were training us, they did not provide skills for teaching digital literacy in specific subjects such as English. So, ummm [shaking her head] even if I am aware of the importance of digital literacy in English language teaching, I do not have adequate pedagogic skills for teaching and using it. I rely on my own creative abilities and strategies from colleagues.

4.4.1.2 Category 2: School policies on digital literacy in English

This category comprises of views from participants regarding the school policy on the use of digital literacy in English. Schools accepted the use and teaching of digital literacy but their policies on digital tools and internet connections differed. Mr Phala stated as follows:

School A which is my school has a policy which allows the teaching of digital literacy but a contradictory policy forbids the use of cell phones by learners during school time unless the teacher wants to make a demonstration. Using a cell phone is a punishable offence. So, I use social media in out-of-school activities to communicate with learners regarding assignments although the school support the initiative. The initiative helps me to support learners even after school in order for them to complete their homework.

At school C the policy supported the teaching of digital literacy in English and the participants said that the school allowed them to use smart boards, storage devices and tablets during class time. Mr Baloyi said:

I use the computer centre to teach English grammar – parts of speech, creative writing – and to research on literature topics. I also use social media and chat to learners only after normal school hours as we discuss school work. The school has a Wi-Fi facility although the connectivity is not reliable and the use by learners is highly restricted to FET learners only. Learners use tablets provided by the Gauteng Department of Education to complete assignments and to do research and homework, yaaa that's all.

The school paid for the Wi-Fi connection but did not provide smart phones to teachers and learners. The Department of English at school C supported the use and teaching of digital literacy at policy level.

School B's policy allowed the teaching and use of digital literacy but learners were not allowed to use cell phones during school hours for any purpose. Mr Mudau stated as follows:

Aa! No! use of cell phones by learners during school hours is not allowed at all by the school. I use the computer centre to teach and use digital literacy but the computer centre has few computers. However, the school policy does not indicate how digital literacy should be assessed. The school English Department supports the use and teaching of digital literacy but does not recommend any pedagogical strategies.

All participants indicated that the DBE had deployed a policy but that there were dichotomies in how the policy was implemented. Other participants, who were not singled out agreed with the views presented during group interviews. The important issue at that stage was to make meaning of the findings from interviews for this sub-theme.

4.4.1.3 Interpretation of sub-theme 1

Collected data show that participants were aware of the national policy document stipulations regarding the use and teaching of digital literacy. This awareness answers

the research question on their understanding of digital literacy, which foregrounds its role and purpose in developing pedagogic strategies for its teaching in English at secondary level. This situation concurs with Leask and Pachler (2013) who note that digital literacy should benefit learners and that there is a need for an awareness and pedagogical content knowledge on the part of the teacher for the programme to work efficiently in classroom situations. Participant views, practices and policies found in this study are similar to the experiences and reports on global perspectives on the strategies of teaching digital literacy in English. Issues such as government policy, the incorporation of digital tools in teaching and learning and administration as well as communication purposes are common practices throughout the world.

While the teaching of digital literacy was widely acknowledged by all participants, the policies on the use of cell phones for learning purposes during class time differed. Participants indicated that, in contrast to other parts of the world, their school authorities did not accept the use of cell phones for teaching and learning of English as a second language. This situation hindered participants' initiatives to use and teach digital literacy in English. In support of the mentioned view, Maphalala and Nzama (2014) say that the use of cell phones in schools is prohibited and learners are charged fines for being in possession and use of cell phones during school time. Cell phones are regarded as detractors in cases where learners use cell phone functions not linked to academic purposes. This condition in secondary schools contradicts the aim of using digital literacy in English language classes.

4.4.2 Interpretation of theme 1: Department of Basic Education policy stipulations

Participants indicated that the DBE and schools have policies on the use of digital literacy, but that implementation strategies and set pedagogical guidelines for subject-specific digital technology integration were lacking. All participants were willing to implement digital literacy teaching but desperately needed support from the DBE in terms of materials and skills. The deficiency in the DBE policies has left schools disaggregated on the use of cell phones and social media for teaching and learning. In support of the use of social media and cell phones for teaching in schools, Moodley (2013) says that gaining Basic Interpersonal Communicative Skills in the digital space requires a strong pedagogic content knowledge and digital competence skills to support both teachers and learners to achieve their outcomes in English language learning. As mentioned in

chapter 2, by Moodley (2013) that by the time township learners who started with African languages from Grade R–3 switch to English and the process has far reaching implications on their literacy competence, it therefore means gaining proficiency in English as a second language is already a challenge. For such circumstances, digital literacy can largely be a strategy for improving proficiency in English.

Hew and Cheung (2008) and Wang (2008) agree that constructivism propagates that knowledge is constructed where sharing, curating and networking characterise the nature of learning as opposed to the idea of the teacher as a transmitter of knowledge. This can happen when digital literacy is used to enhance teaching and learning, but participants indicated that the digital literacy policy needed to go further to provide strategies for the use of digital tools in the classroom.

In view of the information from the literature, global perspectives and experiences advocate the integration of technology in English language teaching. The findings of this study indicate that teachers in resource-constrained township secondary schools are taking individual and collective pedagogical initiatives to teach digital literacy because the English syllabus does not clearly state how the digital literacy should be taught in English. Findings further indicate that the government policy on the teaching of digital literacy does not state how the teaching of digital literacy can be accounted for. In fact, no assessment reports or evaluation records for tasks completed on the digital literacy section are required.

4.5. Theme 2: Strategies and approaches used to teach digital literacy

This theme emerged from participants' responses to questions regarding the strategies they used to teach digital literacy in English. The strategies and initiatives included classroom-based and out-of-school literacy practices based on the nature of connectivity. The sub-themes under this theme are the use of computers as tools for teaching English, digital innovative practices, spelling competition group and the use of social media for learning and teaching. Sub-theme 1 is briefly discussed below.

4.5.1 Sub-theme1: Use of computers as tools for English language teaching

The use of computers in the school environment is broad, although my focus was on initiatives and strategies used by teachers to teach digital literacy in English in resource-constrained secondary schools. Views from participants indicated that computers were used for administration, planning and organising lessons and keeping information for transfer and record keeping. The categories include the use of computer centres, smart boards, tablets and school network connections.

4.5.1.1 Category 1: School-based digital literacy

Participants indicated the availability of computer centres in their schools with 25, 30 or 40 work stations in the respective schools. Mr Phala at school A said:

Our school has 30 work stations for a school with more than 1 300 yhaa plus learners. I have to make a booking to use the computer centre and I can only access it once in two weeks for a single class. When I get access to the computer centre, there are few workstations than the number of learners. Learners have to share the computer in groups of three.

At school C, Mr Baloyi indicated that access to the school's computer centre was difficult due to the limited number of computers. However, Ms Vuma indicated that the computer centre was easily accessible for the FET phase. Mr Baloyi said:

I use the computer centre with Grade 11 and Grade 12 learners for teaching English language structures. I prepare teaching slides that I use to make demonstrations and teaching notes depending on the topic of the day. The computer centre does not have laptops for both teachers and learners.

Participants from school B said that they used the computer centre to compute their marks and to do their lesson plans. In other cases they used the computer centre to conduct lessons although there were fewer computers than the number of learners in each class. Mrs Nkabinde stated:

When I am teaching English, I use digital technology and make reference to digital sources but I am not sure whether this is the appropriate methodology for the tasks completed online by learners. In other cases, I observe what my colleagues are doing when teaching with technology and then use the acquired skills in teaching my learners to improve proficiency in reading and writing in English. I struggle with the teaching methodology

because I did not receive any formal training on how to use digital tools for teaching English as a second language at secondary level.

Mr Mathe from school C said that she used the computers in the computer centre to teach English grammar and sentence construction. Mr Mathe said:

I select the grammar items to be taught and then design learners' activities that they have to complete. I ask learners to use the verb root to form words as part of demonstrating morphological structures. The table 4.2 indicates how my learners develop vocabulary from verbs and identify parts of speech as well as verb forms in the lists of words.

Table 4.2 below provides a summary of the participants' presentations non-participant lesson observations.

Table 4.2 Parts of speech presented in an English language lesson

Main verb	Derived words form the verb root
Present	represented, presented, representing, presenting, misrepresenting, misrepresented, misrepresent
-act-	action, acting, activity, factorise, factorisation, factory, activate, activation, actress, actor, activator, actively.

Mr Mathe said that the computer was used to type the words and he also assisted learners in identifying the verb form or part of speech using online dictionaries. Learners used Microsoft Word and the programme helps with automatic error detection by underlying words spelt incorrectly. Learners can then choose an option to correct using the spelling and grammar check depending on the dictionary used. The participant indicated that the vocabulary was used to develop short paragraphs using the words that they have categorised, thereby paying attention to the conventions of writing such as paragraphing, punctuation, concord and coherence in both paragraph and sentence. In other cases the computer and smart boards were used for illustrations and

demonstration of linguistic features of language learning. Figure 4.2 shows a smart board being used to illustrate the use of adjectives to Grade 8 learners.



Figure 4.2 Extracts on how smart boards are used for learning parts of speech in English

The extract indicates that it requires learners to look at the items and use them as resources to find adjectives used to describe them. The pictures are used to teach adjectives and they help learners to construct meaning on how the adjective is used with reference to human actions.

4.5.1.2 Interpretation of sub-theme 1

Sub-theme1 emerged from data collected regarding the creative use of computers and laptops in the schools. Based on the participants' views, computers were used for planning English language lessons, electronic writing (writing essays and paragraphs), for storage of information (storage devices) and for computer transfer to other digital devices (Savage & McGoun 2015). The use of computers for different purposes in teaching English as a second language helps to improve learners' writing abilities (including electronic writing), reading on screens and interpreting messages presented in the form of cartoons (visual literacy). In support of the above-mentioned view Rose (2009) and Crystal (2011) say that language learning takes place through sharing, interaction, negotiation and transfer with the support of digital tools. The views of the participants and their actions clearly indicate that they are taking positive initiatives to

meet the outcomes of the English curriculum. Their initiatives fill the gap created by the English syllabus failing to prescribe teaching methods for digital literacy.

The creation of a cartoon and writing club magazine clearly indicates that participants take initiative to support learners in developing English proficiency particularly with writing skills. Papert (2000) says that Constructivism combined with Cognitivism involves the process by which knowledge is built jointly by learners and teachers. Through the use and teaching of digital literacy participants gain and learn from their practices while improving learner English proficiency in reading and writing electronic texts. Resilience in these learning contexts is through their ability to create, devise and develop teaching strategies incorporating digital tools in the absence of syllabus-based prescribed teaching strategies.

4.5.2 Sub-theme 2: Digital innovative practices

The teaching of digital literacy is strongly associated with technological developments in English teaching and learning. Digital innovative practices refer to participants' actions and motivation towards the teaching of digital literacy in English. In this study innovations include pedagogic strategies, learner tasks and participation on digital connection platforms for the purpose of teaching and learning of English as a second language. The innovations on pedagogic strategies and learner tasks are what Leask and Pachler (2013) regard as technology integration in teaching different subjects at schools. Categories in this sub-theme include the use of computers for a cartoon and an online school magazine club.

4.5.2.1 Category 1: Cartoon and magazine club

During the interviews participants indicated that the creation of a cartoon and magazine club was a participant's (teacher) initiative on the use and teaching of digital literacy in English language teaching. Mr Phala stated:

Learners participate in browsing the internet looking for cartoons, pictures and diagrams that they can use to connect and link with cartoons or pictures in order to write their story using their personal digital resources. I have to guide them and assist in cases where some pictures and cartoons show obscenities and unsuitable content for viewing and reading [with a low voice showing shyness]. The search for the cartoons teaches my learners to use the digital skills and browse a number of websites including current newspapers and magazines. In other cases, I ask learners to look for

cartoons from Zapiro's website or look for pictures from the *Sowetan* newspaper publication for a specific date. My learners often browse to find out leading stories and pictures from *Daily Sun*, a very popular community newspaper in Gauteng. Yhoo! they like Zapiro's cartoons. kkkkkkkk [laughing]

The cartoon club used cartoons to publish stories and print them for learners who had no access to digital devices connected to the internet. The magazine was called *Tidal Wave* and included poems, songs, pictures, short stories, puzzles and cartoons, created by learners in a digital context. Learners used software such as Microsoft Publisher to curate, modify, crop and photo shop pictures for use in academic discussions on social media. Figure 4.3 shows a cartoon which was downloaded and modified to suit the learners' needs.



Figure 4.3 Cartoon of Archbishop Desmond Tutu and former President Nelson Mandela (Mail & Guardian 2012)

<https://www.theguardian.com/world/gallery/2013/may/01/southafrica-f>

participants indicated that their role was to guide learners (especially those with limited digital skills) on using digital tools to copy, paste and crop items for use in their learning of English as a second language.

At school A learners draw cartoons and developed them for communicating advertising messages. Mr Phala's lesson on advertising required learners to draw a brand advert and to describe the brand using adjectives of their choice. Figure 4.4 shows an advert being developed by a group of learners.

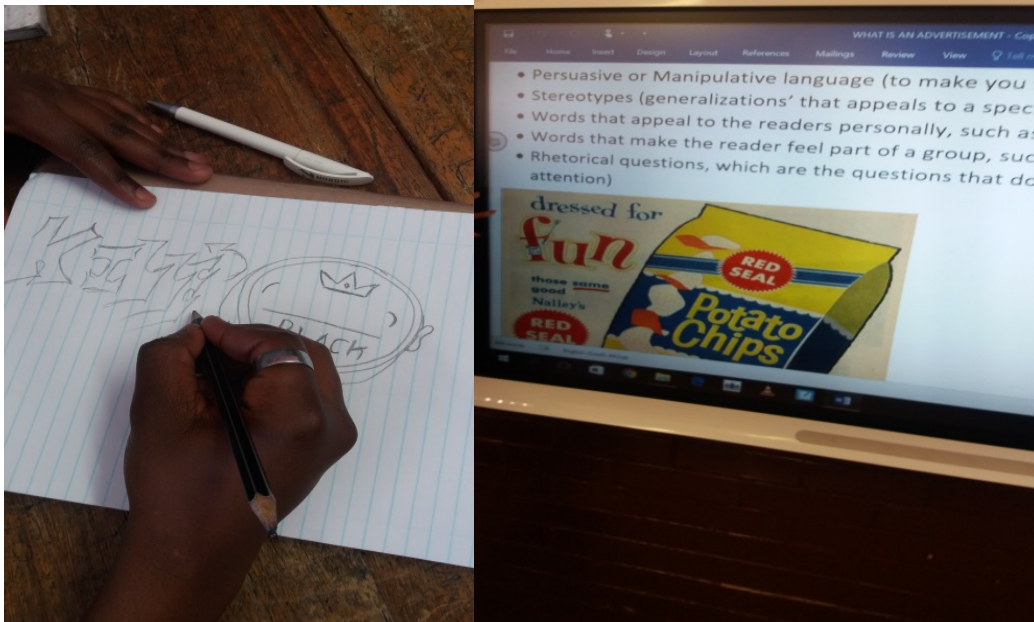


Figure 4.4 Drafts of adverts and samples used by learners

Grade 9 learners were asked to draw an advert and to write a paragraph using different adjectives (emotive language) to describe the product and attract customers to buy it. The sample was displayed on the smart board together with some guidelines. Ms Vuma indicated that the content on the smart board could be saved on digital storage devices for use by learners in other spaces where they had access to digital devices. The strategy in this case is to draw adverts on pieces of paper, then translate them to electronic format for easy transfer, sharing and developing them with the electronic digital effects.

At school C, Mr Baloyi indicated that the cartoon downloads were used for essay writing by GET learners. Mr Baloyi developed essay writing guidelines and presented them as a PowerPoint presentation on a smart board. Mr Baloyi asked learners to scan the essay writing guidelines with the digital devices supplied by the DBE (tablets) and to transfer the information to other digital devices whose use on school is not acceptable. The

learners used the essay writing guidelines and web links to download recommended cartoons to use as stimuli for writing descriptive essays. He said:

I use the smart board to present work created on the computer and transferred using the internet connection (e-mail). In some cases, I use digital storage devices to transfer work and for sharing with learners. The instructions I give to learners include making descriptions using past tense because they struggle to write in past tense in their essays based on my experience of marking their work.

Mrs Nkabinde created connections with learners for sharing and communicating information for the purpose of learning and to improve proficiency in the use of English as a second language. During interviews Mrs Nkabinde stated as follows:

I provide opportunities for learners to the conventions of writing when they write short stories and in the process learners gain knowledge and skills on digital literacies in English curriculum. The strategy is my own creation resulting from my interaction with other English teachers who are using and teaching digital literacies in English.

Learners learned to type words in English, refer to online dictionaries, while participants also learned digital competence skills from learners who were proficient in using digital tools. Learning included the use of custom animations, the use of a variety of fonts, different document formats and reading strategies for digital texts.

4.5.2.2 Category 2: Educational games in English language learning

Educational games are activities and tasks involving play, entertainment, leisure, mind refreshing and learning all packaged in one. Games teach aspects of language such as spellings, word memory, vocabulary, and other parts of speech. Educational games involve the use of existing knowledge structures to create new forms and structures (Hague & Payton 2010). Mr Phala used quizzes and puzzles in *Tidal Wave*. During interviews, he said:

I create word puzzles, jokes and quizzes for learners to play and sharpen their minds as they create connections between words/phrases in the puzzle. I use them in order to develop critical thinking skills in my learners and to develop strategies of solving problems in English language learning and in their real-life situations. I also provide rewards to learners who find solutions in a specified time without cheating.

An extract of the jokes from *Tidal Wave* school magazine in figure 4.5 indicates how language learning can be supported through digital games.

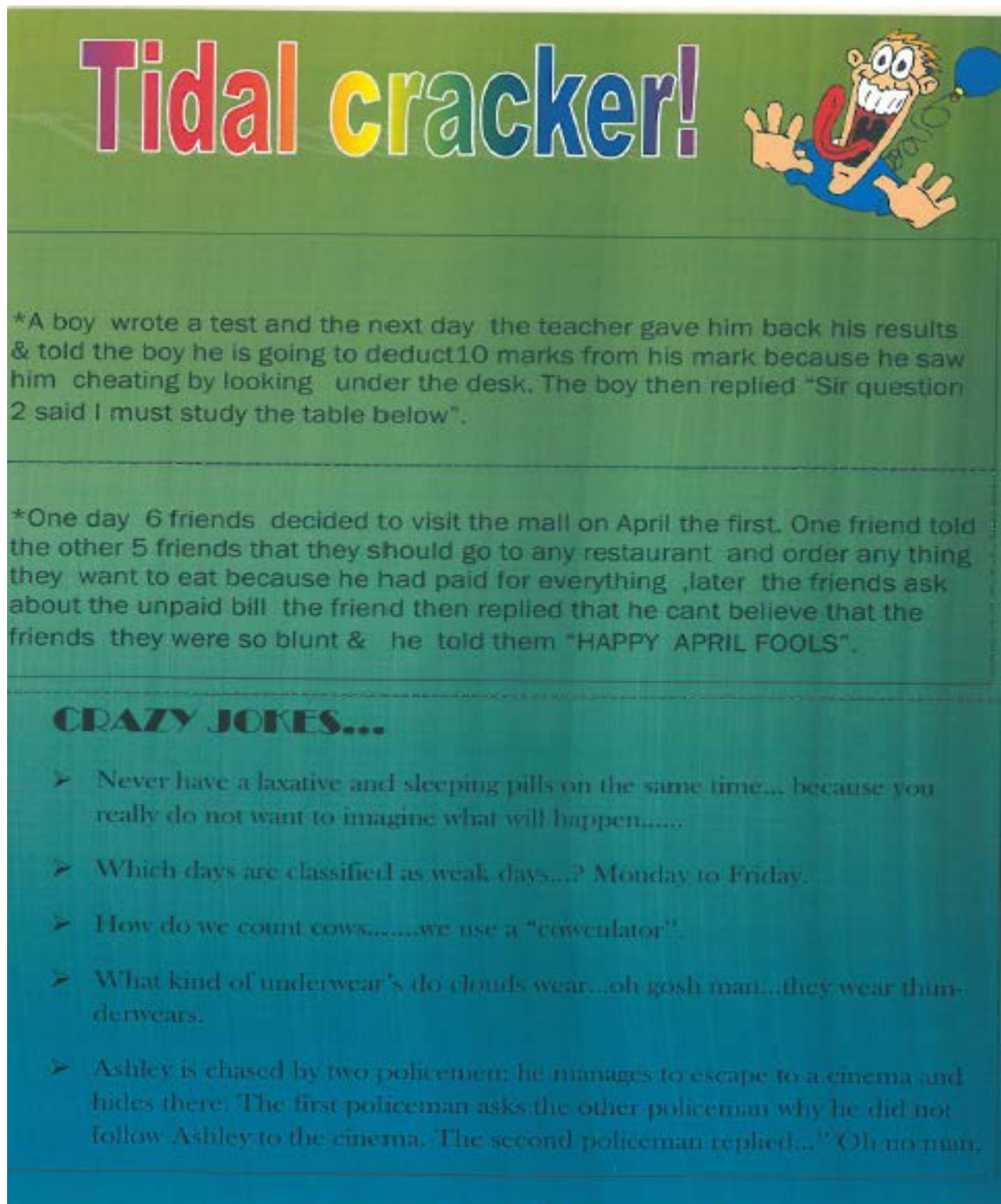


Figure 4.5 Extract from *Tidal Wave* magazine

Mr Mudau used songs to assist learners with pronunciation and creation of sentences. Songs combine the art of music and poetic devices. He said:

I play songs on my phone downloaded from YouTube and ask learners to listen to the words and meaning. After playing the song, I ask learners to list the words they heard and to summarise the meaning of the stanzas. My learners enjoy music such that it's easy to motivate them and to teach them. In some cases, I play the video on the smart board. The video

combines tunes, lyrics, motion pictures, scenes and movements that affect their emotions. This engages the sense of feeling, sight and hearing. The more I engage more senses the more the learners learn and retain what they learn for application in other spheres of life.

In other cases, learners wrote poems and recorded them on their cell phones to circulate on social media. They wrote poems on themes such as love, the environment, politics, health and entertainment. The use of videos, music tunes, pictures and lyrics is the participant's initiative that combines the subject content with other digital facilities packaged to achieve curriculum aims. This strategy is a digital literacy initiative outside the prescribed English syllabus guidelines on the teaching of English as second language in resource constrained schools. Resilience in these digital innovative choices and strategies is attained by the challenge to create opportunities combining digitally based tasks and adapting to the digital setting in the society and schools.

4.5.3 Sub-theme 3: Use of social media in the teaching of English

Social media refers to online facilities and platforms that are used for communication and transfer of information from one source to another. According to Fewkes and McCabe (2012) social media refers to computer-mediated technologies that create platforms to share information on educational, social and career interests. According to the participants in this study social media is a platform to share social information, entertainment and school work discussions. Participants' views show that they connect with learners to discuss homework, update critical discussions and provide guidelines on completing tasks or reading programmes. In this study participants used Facebook, Twitter, WhatsApp and Instagram, and in isolated cases other social media platforms like Blogging and # tags.

4.5.3.1 Category 1: WhatsApp group communication for digital literacy in English

WhatsApp is a social media platform used by most cell phone users. In this study learners and participants used WhatsApp to connect in voluntary groups. Mr Mathe said:

My learners are in different groups based on their interests on social media. I discuss homework assignments, selected English topics and answer questions asked by learners on academic issues. WhatsApp has made my class to become a family because we also discuss social issues, share jokes, music, videos and gospel preaching. Learners also ask questions relating to the subject.

An example of such WhatsApp chats is presented in figure 4.6.

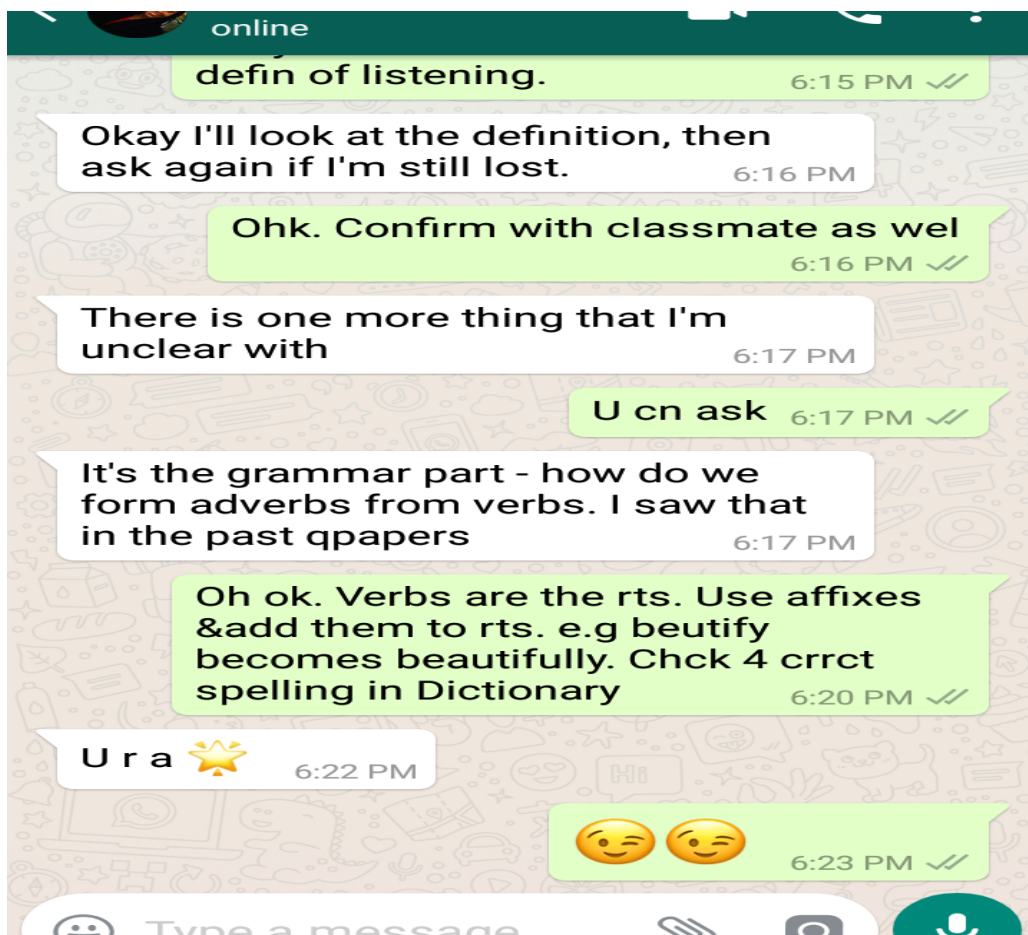


Figure 4.6 Extract of a WhatsApp group chat from school C

The extract in figure 4.6 shows chats between learners and teachers regarding the use of verbs and adverbs. From the time shown in the chats it is clear that learning hours have been extended beyond school teaching hours.

In school C, Mr Baloyi stated as follows:

I connect with teachers and learners from other secondary schools in order to share our experiences and learn from their projects. I participate in the teaching and learning groups because teachers in those groups have experience in teaching digital literacy. Learners in former model C schools have access to digital technology and therefore their digital literacy practices, awareness and experiences are useful for completing English tasks. I joined the English Literature group discussion on WhatsApp and I have received videos and question papers used at one of the former model C secondary schools. I had a chance to chat to the English Literature teacher who advised me to encourage learners to participate on Literature subject site at their school.

In other instances, participants communicated with learners regarding assignments and participants responded to the learners' questions. The extract in figure 4.7 shows the communication between the participant and the learner after school hours.

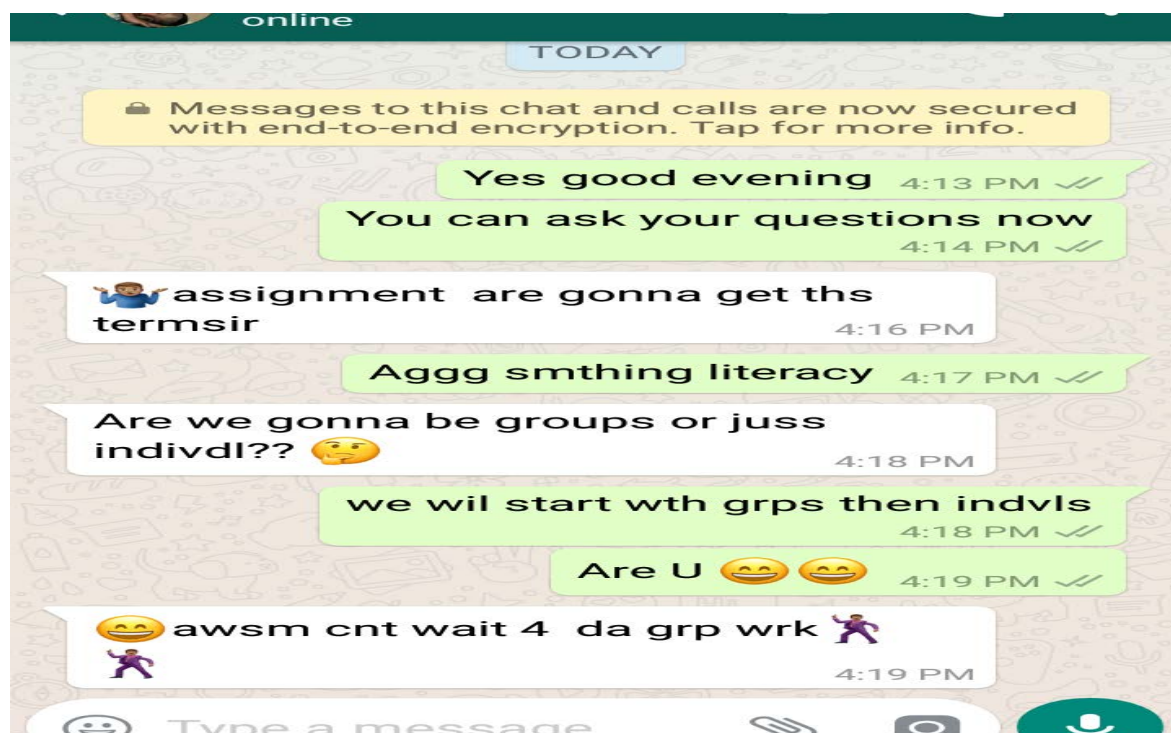


Figure 4.7 Communication between the participant and a learner

The extract (figure 4.7) indicates that communication took place after school hours and learners asked about their assignments. Learners also wanted to know whether the assignment were to be completed in groups or as individuals, thus participating in pedagogical choices. Learners can make choices of working in groups to complete English assignments and also use digital tools to help find answers and other suggestions on the tasks. Learners consult online dictionaries, thesaurus and websites for information.

4.5.3.2 Interpretation of sub-theme 2

Sub-theme 2 comprises of two categories, namely cartoon and magazine club and educational games. According to Prensky (2001) the digital generation is characterised by learners who process information differently from their predecessors. I agree, as nowadays learners in our classrooms are able to multitask. Participants were of the opinion that learning no longer took place when teachers provided instructions to a class

only, but that actions like the creation of specialised groups for school magazines, making cartoons and digital article writing simulating real-life journalism, were also modern ways in which learning took place in learning communities through voluntary participation. Driscoll (2001) confirms that educational gaming has become a digital pedagogy in the 21st century. Participant responses thus show that learners learn while they play, joke and make simulations of what happens in society.

I agree with Driscoll (2001) and Ellison et al. (2007) who corroborate that educational games connect learners through interest groups. Data from interviews and observations show that learners in different schools are grouped according to interests. School A's cartoon and magazine club consisted of club writers and cartoonists while music lovers in school B wrote poems and presented as songs. In view of the presence and participation by both teachers and learners on the digital platform, a common and recurring concern by participants was that pedagogical strategies were not prescribed by the DBE. The participants' options on pedagogic strategies forms part of the initiatives and resilience by adapting to new digital settings namely use of digital tools to package syllabus content for delivery on learning and teaching platforms.

The use of social media extends teaching and learning beyond school hours, thus extending the hours of learning and making teachers available to learners for support at all times. Collaboration and networking in teaching easily connects learners to communities of practice (Riveros 2012, Reid 2016). As shown in the literature review in chapter 2, literacy is a social practice and different reading roles collate in digital literacy because the readers take their roles depending on the context. Reading jokes from social media and interpreting language questions and quizzes on the same screen apply multitasking and multiliteracy skills in language pedagogy. Multitasking takes place at different levels. Firstly, it takes place at a cognitive level when learners process information on the basis of reading and understanding texts which include jokes and secondly, it takes place at a physical level when learners shift from one screen to another and follow moving images on the screen. The latter task requires digital literacy skills because the learner needs to manipulate the tool in order to access the information. In addition to the above functions, learners can possibly engage in other tasks such as relating texts to other incidences in their lives or to language aspects.

4.5.4 Interpretation of theme 2

Theme 2 resonates around strategies and initiatives taken by teachers in teaching and using digital literacy in English. In chapter 1 of this study I discuss initiatives as creations and inventions, through reskilling and personal motivation in adaptive resilience, to develop competence in multimodal texts, connecting, collaboration and video gaming (Savage & McGoun 2015). Data from interviews show that downloaded cartoons, created videos with poems and music, short stories and created puzzles are circulated on social media platforms by both learners and teachers in learning contexts. The use of cartoons and pictures constitute visual literacy (Hague & Payton 2010), while browsing the internet provides learning digital skills that learners can use elsewhere in their lives (Giampapa 2010). The use of articles from *The Sowetan* and *Daily Sun* as well as Zapiro's cartoons links the learning process with community issues, values and beliefs. Learners are meant to understand the relevance of learning material to their lives. Belshaw (2011) posits that the merging of school literacy practices and social settings provides a socio-cultural context for teachers. Teachers and learners combine school literacy practices with social literacy practices using digital tools and digital connections.

For this study, information from the literature review indicates the use of pictures, cartoons and other visuals in digital literacy programmes in the teaching and learning of English as a second language. Findings from this study indicate that teachers use cartoons and videos from the internet for learning, as is the case in Singapore, the United Kingdom and Norway. A distinct feature in one of the participating schools on digital literacy teaching in English is the use of school magazines to teach electronic writing. The use of a magazine club to promote digital literacy is unique because learners and teachers collaborate in different projects shared on social media and in print as a mitigation measure for resource constraint. Furthermore, the magazine club provides opportunities through contextual differences in terms of how the cartoons, pictures and other visuals are used in the teaching of digital literacy in English.

4.6 Theme 3: Challenges faced when teaching digital literacy

Challenges in this study refer to constraints either in terms of material resources or conditions in the normal teaching and learning of English as a second language in

township schools. The challenges include skills shortage, limited access to digital devices, and a lack of discipline among learners, vandalism and corruption.

4.6.1 Sub-theme 1: Shortage of digital devices and skills for teaching digital literacy

Shortages of computers and digital devices characterise township secondary schools. In many township schools two or more learners share one computer work station, while some participants use storage devices to support disadvantaged learners. Some of the schools that participated in the study had received equipment sourced and donated by the School Governing Board (SGB). Selected participating schools had fewer than 45 computer work stations, which were grossly inadequate as the school catered for about 1 300 learners and more than 30 teachers. Learners did not have the financial resources to buy digital devices that connect to the internet. In school C, teachers were motivated to teach and use digital literacy, but only grade 11 and 12 learners had access to the computer centre and tablets. In other participating schools, some teachers did not possess digital competence or the pedagogic skills to teach and support learners on digital literacy. In extreme cases English teachers were not motivated to teach digital literacy as they believed that anything technological should be the responsibility of Physics and Chemistry teachers, unless prescribed by policy and formally assessed.

4.6.1.1 Category 1: Limited digital devices available for teachers and learners

In this category participants indicated that they struggled with computers, laptops and other digital devices in the teaching of digital literacy. Mr Phala said:

Our school has only one computer centre and we have to make a booking in advance in order for my class to have access to the computer centre for digital literacy. In cases where we gain access, three to four learners have to share a work station and this makes it very difficult to teach computer skills.

Some of the learners were from informal settlements and were generally poor. In this context participants indicated that the learners could not afford devices like smart phones. Mr Mafoko said:

We have learners from Garaba informal settlement who struggle to get the basics and asking for a smart phone is just too much for them. In addition to this condition, learners from informal settlements have never had access to computers such that their digital literacy skills are grossly limited.

Participating schools did not provide laptops and computers to the teachers. Participating teachers indicated that they used their smart phones and other personal digital tools for communicating with learners and conducting digital literacy business. Mr Mathe said:

I use my smart phone to communicate with learners on academic issues such as completing assignments and other English language issues.

Participants struggled with digital skills in order to support learners in digital literacy in English pedagogy. Mr Mafoko, Mr Mudau and Ms Sithole indicated that their skills for teaching and using digital literacy were limited. Ms Sithole stated as follows:

I have never received any formal training on the use and teaching of digital literacy. I do not have pedagogical strategies and the initiatives I use have been learnt from fellow teachers through collaboration and networking. I do not have requisite skills to teach digital literacy. The training that was organised by the Department of Basic Education encouraged participation on voluntary basis. Participants who attended the training sessions only benefitted on how to use a computer with limitation on the methods for English language teaching. I have persuaded English teachers who attended the training to assist me but they struggle with methodology.

Departmental (DBE) training on e-learning was voluntary and provided instruction on the basic operations of computers without providing skills on how digital tools should be used in teaching specific subjects such as English. Participants undertake their own initiatives in teaching, connecting and using digital literacy in English.

4.6.2 Interpretation of sub-theme 1

The success of teaching and using digital literacy depends on the availability of digital tools, digital competence skills and connectivity. Participants indicated that township secondary schools were plagued by a shortage of computer technology for teaching. In some of the schools, the teachers indicated that they did not possess the necessary skills to teach digital literacy in English. As alluded to in chapter 2, learners from under-resourced environments are characterised by limited digital literacy competence skills. In this context, all participants in this study indicated a lack of digital literacy skills.

Evidence gathered from class observations and participant interviews showed that learners shared computers at school (3–4 learners per work station), which would not have been the case if financial resources were available to purchase more computers and connect them to the internet. P4 indicated that in school B some participants lacked digital competence skills, therefore, could not teach or use digital literacy. In cases where

digital literacy was limited, some participants initiated their own activities which they completed with learners. Participants without digital literacy skills and knowledge of pedagogic strategies in the teaching thereof did not use the computer centre for digital literacy in English.

4.6.3 Sub-theme 2: Vandalism of digital equipment and cyber bullying

Vandalism is understood as the intentional and unintentional breaking and damaging of school and personal digital equipment and devices. Some of the learners in township secondary schools damaged the computers by cutting cables and scratching computer screens. Most participants in this study indicated the nature of the vandalism they faced when using digital tools in the computer centre for teaching and learning English. Category 1 explores the nature of vandalism that they experienced.

4.6.3.1 Category 1: Vandalism

Common vandalism indicated by participants included cutting or breaking of cables, scratching screens, making ink marks on surfaces and damaging the data ports. Other forms of damage included unauthorised use of memory devices that were contaminated with viruses. Mr Baloyi at school C said:

Learners with limited digital literacy skills and awareness often break digital devices and scratch screens especially in cases where they are sharing. My observation as the teacher is that when learners are sharing, the other learners who are not operating the machine remain obsolete and start tampering with cables and gadgets.

In school A learners cut the cables because they wanted to steal the (UPS) uninterruptible power supply). Mr Phala pointed out:

I have to be on the high alert for digital devices such as the power supply and cables because learners cut them and steal them for personal uses at home.

Participants complained about the responsibility of watching over the digital equipment vandalised by learners.

4.6.3.2 Category 2: The challenge of software damages

As mentioned earlier, other forms of damage constituted the use of unauthorised digital storage devices in the computer centre. Participants said that learners used own storage

devices to copy downloaded music and videos from unauthorised sites. Ms Vuma at school C said:

Learners plug in storage devices and download music and videos but in most cases the devices leave viruses that have caused problems for the computer centre. This type of damage has cost the school some money when the viruses are cleaned. In other situations, a learner left a virus that destroyed my documents and it was very difficult to recover them. The school does not have any rule or regulation to use for charging such practices done by learners.

All participants indicated that cyber bullying, stalking, and access to harmful content (explicit sex/pornography) were major challenges affecting the teaching and use of digital literacy. Mr Baloyi said:

I always have complaints about learners bullied on social media (mostly). My Grade 10 learners are very fond of accessing harmful sites during digital literacy classes in the computer centre. The school has tried to block some of the sites but learners always crave to connect and participate on unauthorised sites. They download pornographic material and distribute among other learners and photo shop using class mates. This is a bad practice and affects our participation on the digital space.

Learners used pictures of their class mates on Facebook and WhatsApp. Participants (e.g. Mr Phala and Mr Phala) used social media and the internet for communication and discussions on subject sites through blogging.

4.6.4 Sub-theme 3: Cyber linguistics

The term “cyber linguistics” is a recent development referring to the use of social media and shortened internet language, the use of emojis, abbreviated language, images and symbols. Crystal (2005) states that internet linguistics, also described as cyber linguistics, is the new form and style of language for communication in cyberspace and is linked to the use of facilities such as the short message service (sms).

4.6.4.1 Category 1: Cyber linguistics in English language learning

Participants reported that they used shortened words and abbreviations on social media for communication about school work and for socialisation. Words in short form like lol (laugh out loud), gr8 (great), gud nyt (good night), kul (cool), msg (message), are frequently used on social media. The use of these words for communication on social

media such as twitter, WhatsApp and Instagram is widely accepted by different social media groups. Mr Baloyi at school C stated:

My learners use the short form and abbreviated language when communicating social media or using Short Message Service (sms). Learners in groups understand the messages conveyed and different groups may use different format for their communication.

At all participating schools learners who had access to social media used abbreviated and shortened language for communication even when discussing school work, as indicated in figure 4.8.

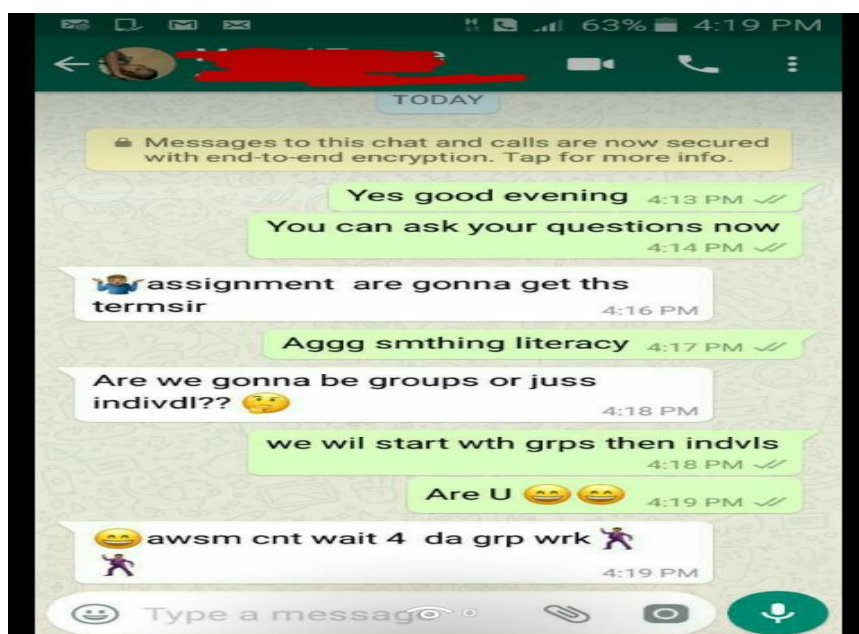


Figure 4.8 Extract of WhatsApp group communication

The learners asked questions and communicated with their teacher on academic issues using social media after normal school hours. Mr Phala said:

For the groups that I teach and coordinate, I use abbreviations that they understand but there are situations when learners use abbreviations that I am not familiar and I have to ask them to clarify what they mean. I think the social media has a new language or I can say it's distorting and wrecking our vocabulary but perhaps it's something new that we need to learn as teachers. My worry is that this code of language is not accepted when students answer questions in the final examinations.

Most participants used social media – particularly WhatsApp. Learners connected to the teacher's network communicated and were free to ask questions and discuss academic

work with their teacher. The extract in figure 4.8 indicates how images and text were used together when communicating on social media. Ms Sithole from school B indicated as follows:

I make announcements, post suggestions and discuss both social and academic issues. However, some of my learners abuse the WhatsApp group by intention and accidentally posting unethical content. In other cases learners post message at 1.00 am and disrupts sleeping. These practices violate our social media code ethics and communication. There is no backing in terms of policy and regulation on how to control this because our discussions and communication does not have policy back up from the DBE.

Analysis of documents such as WhatsApp messages indicated that learners used more than one language (translanguaging and biliteracy) when using social media. Some messages contained words like *khuluma*, probably taken from the isiZulu orthography and then mixed with English. Mrs Zuki said the following during the interviews:

Code mixing and code switching is a common feature for social media communication. Learners who communicate with use pictures, images, shortened language code, isiZulu, Sesotho, Afrikaans, English and even Tsotsitaal words (code switching and mixing). It's just a jungle with some kind of order. I don't know what the future will be like with this technology. I am worried about our languages and their purity.

Participants indicated that they used common languages in the Tshwane North district for communication. The participants did not regard this as a problem, as this phenomenon was determined by the diversity in South Africa.

4.6.4.2 Category 2: Visual images

In this category I present participant views regarding the use of images. Learners nowadays take pictures of friends, family members and classmates and distribute them on Facebook, WhatsApp and other social media connections. During the interviews participants confirmed the presence of the pictures on the platforms. The learners used images to communicate with each other in groups and with their teacher as well. Mrs Nkabinde indicated that she did not participate on social media platforms such as WhatsApp because these were corrupt. Mr Phala said:

We use social media images and pictures for fun and assisting learners with homework and other subject related matters. Images, pictures and videos provide entertainment, learning opportunities and socialisation. We

share music videos, pictures and images with learners on social media. In some cases, we discuss the lyrics with learners on certain music genres.

Some images used by learners are shown in figure 4.9.

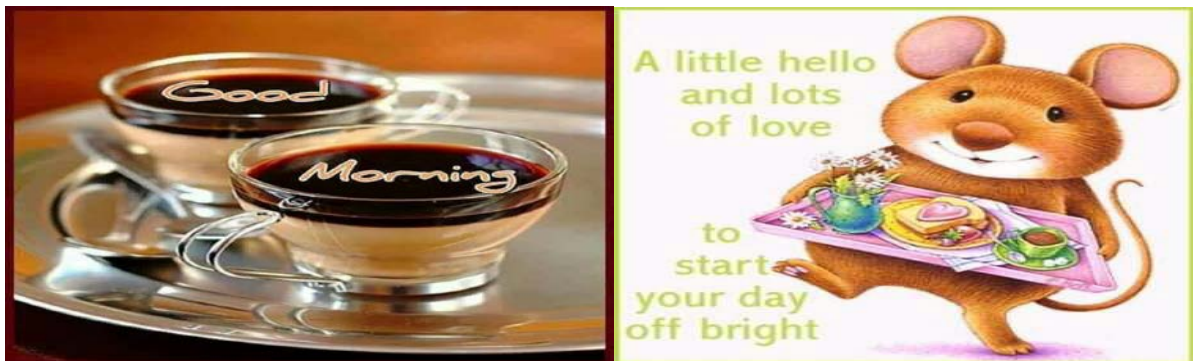






Image	Description and implied meaning
	An expression of love
	Image representing thankfulness
	Image expressing happiness
	Pausing a question or giving instructions

Figure 4.9 Images used by social media participants

Learners communicated greetings and messages to their friends, classmates and group members using images. In other instances they used images for showing love and thanks to someone for something they would have done. The images in the table above indicate the common images used for communication and the messages intended for their recipients. Some images were used to express happiness, sadness or just being bored depending on the nature of the conversation. In other instances, learners and

teachers used images that reminded group members of assignments or any other commitments they might have had.

Mr Baloyi stated:

I use images and pictures to communicate my feelings and to demonstrate my ability to use different digital facilities. The use of images creates an emotional appeal and motivates texting online. I feel happy to receive hearts from my friends, learners and colleagues especially in trying times. So, social media combines academic discussions and socialisation. In other instances, the images are combined with music tunes and voices on YouTube and I become happy.

Technology combines learning, socialisation and entertainment. The key issue is to understand the meaning of all these digital activities in the life of the teacher and the learner.

4.6.4.3 Interpretation of sub-theme 3

Sub-theme 3 culminates from the role of social media in English pedagogy. Gee (2004) and Cope and Kalantzis (2009) state that the pedagogical responsibilities of a teacher as facilitator is to attend to well framed questions and create connections for their learning communities, re-direct learner thinking and demonstrate academic leadership. The views of the participants during interviews agreed with the above. The only disparity was in the case where participants did not have any pedagogical prescriptions and recommendations from the DBE on the teaching of digital literacy.

The use of abbreviated language and shortened words is part of language development which linguists should accept and investigate scientifically to determine whether it improves language education (Crystal 2005). According to the participants, the only challenge was the fact that the abbreviated language, shortened words and emoticons were not accepted in examination contexts. However, the use of abbreviated language, emoticons and shortened words enhances communication and society continues to use them in different contexts.

In support of the need for the communicative function, Savage and McGoun (2015) state that connectivity and networking combine learning and socialisation in learning communities. Furthermore, Janks (2010) posits that world communities are connected into a network of cultures and economies through languages such as English.

Connecting learners for the purpose of learning English also connect them to world resources and opportunities (Belshaw 2011).

4.6.5 Interpretation of theme 3

Theme 3 is about the role of social media in the use and teaching of digital literacy. The key issues addressed include participants' views on the use of shortened language, abbreviated words, images, pictures and videos in the teaching and learning of English as a second language in Gauteng township secondary schools. The use of images and abbreviated language is a development in communication which offers more opportunities for participants. In the same vein, if digital literacy is defined as the skills, knowledge and understanding that enables critical, creative, discerning and safe practices when engaging with digital technologies in all areas of life (Hague & Payton 2010), then a re-mix, re-design and incorporation of components from other life experience through connectivity and networking makes learning rich and exciting to learners.

The use of images and pictures with emotional appeal motivated participants to connect various facets of life with educational contexts, thereby creating learning communities. Participants were of the opinion that the use of shortened language code and abbreviations were not in line with the conventions of Standard English language teaching and learning. This feature extends to examinations for the national assessment plan because the abbreviated and shortened language is not accepted for examination purposes. One participant asked whether the DBE should begin to think and plan for digital literacy testing and examination, and development of cyber linguistics in language development. The unfortunate condition was that participants indicated that no pedagogical prescriptions from the DBE existed on how social media and cyber linguistics were to be used in the teaching and learning of digital literacy in English.

In view of information from the reviewed literature, similarities are common in the use of images and cyber linguistics on the digital communication landscape. In this study, teachers in different contexts use visuals in different ways for presenting a variety of subject content. The common feature among participants was their use of visuals for communication and teaching different aspects of English. From the data collected, it was clear through the patterns from analysis that teachers and learners used visuals even in translanguaging contexts. By translanguaging, I mean a context in which users use more

than one language in communication – a practice that may not be possible in monolingual societies. In view of the above mentioned digital literacy practices, teachers and learners also integrated cultural contexts in their use of visuals.

4.7 Theme 4: Strategies for improving the teaching of digital literacy

Strategies for improving the teaching and use of digital literacy were part of the initiatives taken by resilient teachers attempting to offer possibilities in resource-constrained environments. This theme presents suggestions and options from participants on how the teaching and use of digital literacy in English could be improved. Key issues in this sub-theme include training of teachers to empower them with skills for digital literacy, as well as a policy review on pedagogical strategies for digital literacy.

4.7.1 Sub-theme1: Training and improving attitudes towards the teaching of digital literacy

Participants indicated possible strategies for the improvement of the teaching and use of digital literacy in township secondary schools. In the suggestions, teachers indicated the need for a sound training programme which focuses on teaching of particular subjects and its methodology. Training on e-learning, which provides tools for digital proficiency does not necessarily teach teachers how to integrate language teaching methods and strategies. Participants recommended that teachers and learners needed to be connected to networks in order to be able to collaborate on different learning projects. According to the participants, connections needed to be provided at school, community, cluster, and district level. This connection and networking would provide platforms for teachers and learners to provide learning opportunities at all times.

4.7.1.1 Category 1: Training and developing pedagogical guidelines

Participants suggested that the connections and networks should help provide opportunities for online assessments on national programmes such as the Annual National Assessment (ANA). In this assessment learners could also be examined on digital literacy and proficiency in the use of languages of teaching and learning. Mr Mudau said:

I suggest that digital literacy should be examined for them to be taken seriously by teachers and learners. For example, we could start with

Annual National Assessment tests done on digital connection. So, the DBE and schools should cooperate on training teachers (emphasis on pedagogical skills) for digital literacy in English and other subjects.

Mr Baloyi said:

I suggest that all teacher training programmes at universities should provide modules and guidelines on the teaching and using digital literacy

In other instances, participants suggested that parents should begin to pay a levy for digital literacy, or possession of tablets could be considered as a precondition for enrolment. Ms Sithole indicated as follows:

The parents should pay for digital literacy costs which include connectivity and buying the gadget itself. In addition to costs, the DBE should improve the policy on the use of cell phones for teaching and learning in schools.

Some participants suggested the use subsidised Wi-Fi connections in secondary schools for online books rather than spending money on text books. Mr Mafoko said:

I suggest that the school authorities or DBE subsidises the connectivity costs and provide prescribed text books online. Recorded lessons by subject specialists can also be loaded on YouTube for easy access by learners and teachers.

Participants suggested special connectivity contracts with service providers such as MTN, Vodacom and Cell C on providing connectivity rates for school Wi-Fi. Participants indicated that they needed to be supported in creation learning communities.

4.7.1.2 Interpretation of sub-theme 1

Based on the views of the participants, the DBE and respective secondary schools need to take further steps in supporting the initiatives of teachers on the teaching of digital literacy in English. In view of the need for training (re-skilling of teachers), it is also important for current teacher training programmes such as the PGCE, BEd and any other professional teacher development programmes to support skills development on the use of digital literacy in English and all other subjects.

4.7.2 Interpretation of theme 4

Theme 4 is about participants' suggestions regarding the use and teaching of digital literacy. Participants indicated that there was a need for training that provides digital literacy skills and pedagogic content knowledge (Leask & Pachler 2013). According to

Motteram (2013) connectivity and networking creates a connected community where learning and socialisation are combined. Connected learners and teachers get access to electronic learning and teaching resources as well as other digital platforms such as e-mails, podcasts, blogging, social media and participation on the world wide web (Leask & Pachler 2013). Participants agreed with this notion as they indicated the need for the use of cell phones to support teaching and solve the problem of shortage of computers in schools. Connectivity also fosters collaboration, a key feature in digital literacy because once learners and teachers are connected they can form groups to work on different projects. In support of this view, Hague and Payton (2010) emphasise teacher collaboration as a key phenomenon for sharing and getting access to resources for teaching and learning.

Information from reviewed literature indicates that school cluster associations, subject connections and networks as well as teacher professional development platforms are useful for collaboration on digital literacy practices and completion of tasks. In the context of this study, participants use the mentioned platforms for communication and collaborative learning with learners. Participants use the platform to communicate professional matters such as sharing memoranda for English tasks, assessment rubrics and discussions of pedagogical views on presentation of content. Teachers use social media and e-mails for this kind of communication to share important information. However, study revealed that no formal assessment of digital tasks is done in township secondary schools except for CAT practical only. In South Africa, out-of-school digital literacy practices are not legitimate and not examined.

4.8 Discussion of findings

4.8.1 Teachers' understanding of digital literacy

With this discussion I aim to make sense of the results. Making sense involves identifying similarities in practices that were reviewed in chapter 2 and understanding new patterns revealed by the participants' views and actions. In this study, four major themes emerged from the data, namely, teachers' understanding of digital literacy, strategies and approaches used to teach digital literacy, challenges faced when teaching digital literacy in English, and strategies of improving the teaching of digital literacy. The themes emerging from the study help to indicate the purpose of integrating technology in

teaching English. The ultimate goal is to provide access to information repositories and create opportunities for school graduates in the world of work. Participants' strategies and approaches culminating from collected data can be developed into models for teaching and learning in resource-constrained secondary schools or similar contexts.

The findings reveal that teachers are aware of the importance of digital literacy for teaching and learning of English as a second language. Participant Mr Baloyi said: "I am aware of the importance of teaching digital literacies in English". Most participants in this study understood digital literacy as the use of computers for research, sharing information, accessing knowledge information repositories, and creating and designing knowledge structures for the purpose of solving problems in everyday lives (Eshet-Alkalai & Amichai-Hamburger 2004). Computers are also viewed as administrative tools for registration, admission and keeping learner records. Teachers use computers to research online sources, evaluate information, modify content, and select appropriate methods for presentation in class, depending on their learners' level of competence and proficiency in the use of English. Despite the participants' use of digital tools and digital literacy for learning, findings from the interviews and observations indicate that the teachers do not prepare lesson plans for digitally based tasks, as the participants did not have the skills to do this.

4.8.2 Initiatives and strategies on digital literacy

Strategies used by participants included the use of social media for communication and discussion of English subject matters. Group chats, Google searches, e-mails, tweets and SMSs were used to ask questions, respond to issues under discussion as well as create texts, make meaning and transfer information to other digital sources and devices. Digital tools were also used as screens for displaying, saving work as videos, and communication in learning and teaching environments. In this research context social media discussions combined academic work, social issues and business. Participants preferred the use of social media because the costs were relatively affordable and the platforms were available all the time. On the basis of teacher resilience and self-efficacy, participants learn teaching strategies for digital literacy from their colleagues (Ungar 2008). The Department of Basic Education gives the impression that digital literacy is covered in e-learning training. However, such training simply provides basic computer

applications training and do not include the methodology for using and teaching digital literacy in languages such as English. There is a need for DBE to review the policy implementation strategy.

Participants were making positive adjustments to challenging situations in cases where they had to design activities, develop methodology which suited their needs, and implemented strategies in order to meet their educational outcomes. Participants were also managing situations involving a critical shortage of digital devices and connection services. Participants in this study initiated and used their own pedagogic strategies in teaching digital literacy because they lacked the knowledge, skills and pedagogic support of the education authorities.

In support of their initiatives, participants used videos to create opportunities for learners by sharing the videos with friends and other learning partners in their out-of-school literacy practices (Reid 2016). The key point at this stage is that modern learners experience learning in different modes and learning becomes exciting when learning takes place in socialising contexts. The learning process involves the use of computers for typing to produce texts used for assessing creative writing and electronic tasks. In this strategy, learners learn to edit their work, use word-processing functions, custom animations, creation of images and other applications such as font size, bold and italics (Savage & McGoun 2015). This teaching strategy also creates opportunities for learners to access online stories and pictures to support their creations, as well as access to easily accessible references from Google searches.

In view of the need to access online services and other digital facilities, the Gauteng Department of Education Tablet Initiative (GDETI) provides smart boards and tablets for learners to access information. The accessed information is stored, retrieved and transferred to other sources such as storage devices or multimedia formats for use by learners in different contexts (Leask & Pachler 2013). The advantage of using digital equipment for writing and storage saves time for teachers.

Teachers' digital literacy initiatives leading to the use of word puzzles, cartoons and spelling competitions form part of the participants' creations in adapting (resilience) to the use of technology in township secondary schools. In teaching and learning contexts, games and competitions motivate learners because there are rewards linked to such competitions. The greatest dividend of teaching digital literacy through the use of videos,

cartoons and games on computers is that the learners who become proficient with digital tools can engage in learning activities at any time.

Discussions with participants regarding the use of social media indicated that school authorities did not regard social media as a facility for academic purposes. Participants indicated that this use of digital literacy in teaching was their own initiative. Discussions revealed suggestions that the pedagogical strategy should be called social media based pedagogy, because it combined socialisation (discussion of social matters) and learning activities. Leask and Pachler (2013) describe social media based learning strategies as passionate affinity-based learning.

Learners' fundamental experience of social media connection is that it creates a sense belonging to a network where social matters and academic issues are combined. Learning in this context takes place through collaboration (constructivism), self-correction, self-regulating and self-rewarding coined in vicarious experiences of self-efficacy (Bandura 1977, Redmond 2010). Learning through social media is personalised because each learner is connected to groups of their choice in accordance with their interests and motivation. This study revealed that learners joined chat groups such as the cartoon club, spelling competition groups or school magazines based on their interests. The resultant benefit of belonging to groups is that social media incorporates creation of new knowledge through re-cycling, re-mixing and legitimisation of recycled existing material. In this way, new forms, patterns, structures, and genres of knowledge are created and shared among group members (Leask & Pachler 2013).

Social media encourages learners with low self-esteem who find themselves in discriminating environments to be connected and to communicate their feelings in group chats to improve their attitudes. Participants who took up initiatives created strong partnerships with learners in both social and academic matters. Participants indicated that learners seek advice on both social and academic issues on social media platforms. Participants have become online parents, care givers, mentors, supervisors, and counsellors for almost 24 hours of every day. In some incidences, participants indicated the threat of cyber bullying, online gossip, fake news and pornography, but those challenges could be dealt with if specialised software were used and participants' training as facilitators were enhanced (Teacher resilience to technological development). Social media breaks and extends learning boundaries in order to accommodate learning in out-

of-school multiliteracy practices. I discovered that teachers can provide individual support to learners if group and individual connections with learners were made available even after school. Participants are currently connecting with learners and supporting them on social media discussions such as WhatsApp group chats, but the challenge is that both participants and learners individually bear the costs of the connections and the digital devices.

4.8.3 Collaboration and multiliteracy

During the interviews it was revealed that English language facilitators in districts were helping with connecting teachers (non-virtual connections) to teams and academic discussion groups for different levels of English language teaching. However, teachers have extended the connections and networks to their own groups where both academic and social issues were discussed. For example, P7 indicated that he networked with former model C secondary schools and they shared experiences of using digital literacy in English teaching. The formation of self-study groups, mentoring of inexperienced teachers, and discussions of the teaching and use of digital literacy during English departmental meetings indicates the teachers' adaptive resilience on digital literacy. While the process of acquiring the skills is not properly organised and backed by policy (according to participants) it yields positive results and progress as teachers have been able to improve on the use of digital tools in English teaching.

Improvements and initiatives on the teaching of digital literacy in English have connected teachers to different teaching groups and platforms using e-mails, online blogging and podcasting. Participants (P7& P8) indicated their online participation and contribution on subject sites. Participants also shared pedagogical strategies, English teaching initiatives, online discussions and challenges emerging from teaching English as a second language in township secondary schools. Participants shared learner activities, subject memoranda, teaching notes, question papers and experiences using digital connections (Using similar examples of social media already presented in other sections of this chapter).

Digital tools provide access to videos on YouTube, pictures, cartoons, texts, diagrams, tables, and graphs – all combined to communicate and present content to both teachers and learners. The participants confirmed that digital literacy breaks boundaries between learning environments such as schools and social situations (Hidden curriculum as

propounded by Bowles and Gintis 1976) and extended these to social settings, thereby providing pragmatic learning opportunities (Leask & Pachler 2013). The experience of merged learning environments and social and work-related setting makes digital literacy a socio-cultural practice and excites learners when they combine work, play and learning (digital generation multitasking way of doing things) in one continuous process (Reid 2016). Multimodalities and multiliteracies create opportunities for learners as they develop their identities through social media participation, and share their cultural beliefs and values across ethnic groups (an issue imbedded in othering) in a multilingual and multi-ethnic South Africa. Evidence from interviews and observations reveals that social media groups are not formed on the basis of tribal, ethnic or national affiliations. Social media groups are mostly multi-ethnic and multidimensional (Cross bordering in South African linguistic repertoire). Learners are experiencing learning in multicultural contexts. Participants indicated that the social media group chats and discussions took place across ethnic and cultural groups. In classes where digital literacy is taught and used, learners experience, construct, analyse and question knowledge in multiple contexts. This practice creates rigour in learning and is based on partnership.

Participants indicated that learners' reading habits and patterns improved as evidenced by their presence on social media. In reading digital texts learners become participants, text decoders (code breakers), text users and text analysts (Reid 2016). In learning English as a second language, learners become aware of the phonological structure, reading strategies, spelling and grammar competence using different fonts, colours and sizes. The interviews revealed that learners and teachers developed critical thinking skills, and evaluated and analysed content and information sources when they used digital literacy in English learning. The strategies foregrounded editing rather than semantic meaning making and design.

4.8.4 Digital resource constraints in township secondary schools

Resource constraints can be at two levels on the digital literacy continuum. Material resource constraints refer to the shortage of digital devices and network connections, while mental resource constraints refer to a lack of knowledge and skill to function in cyberspace. In cases where knowledge constraint is a critical issue, participants are taking initiative to learn how to use computer technology for the teaching of digital literacy

(Hague & Payton 2010). This is a typical example of adjustment in challenging situations, namely resilience. The use of computer technology and the use of digital literacy are affected by a lack of resources in township secondary schools. School A had two functional computer centres and with smart boards installed in all grade 12 classes. This initiative from the school is to be commended. School B had a single computer centre with a few workstations and the internet connection was constantly interrupted. Learners shared work stations, which was not ideal for the teaching of digital literacy.

4.8.5 Creativity and critical thinking in digital literacy spaces

The use of digital tools and the teaching of digital literacy involve creativity. Creativity is the process of making new shapes, producing new ideas, and modifying existing structures of knowledge through curation in order to produce an end product with a new look (Savage & McGoun 2015). In support of creativity in learning English, participation on social media platforms results in creation of new words and styles of writing together with new forms of communication. For this study, teachers and learners used abbreviated language, short forms, acronyms and images for communication.

The relationship between traditional modes of literacy and new literacy is far from a straight-forward continuum. While patterns of reading such as the top-down approach and left-to-right movements can be applied on digital texts, strategies such as zigzagging, and the use of emoticons and abbreviated language supported by images pose considerable challenges for teachers in secondary schools (Crook 2012). During interviews, participants struggled to articulate the issue of internet linguistics because of the complexities around it in the South African English language context. Critical issues included the teaching of Standard English for curriculum purposes (examination and communicative competence) and the emergence of cyber linguistics on the digital literacy continuum. The school syllabus does not accept the use of emoticons, a mixture of text and images, short forms and constantly abbreviated language in formal writing. Learners are expected to write full sentences and use correct spelling in formal English.

Participants indicated that learners' and teachers' creativity were based on their digital proficiency and experiences in the subject. English learning tasks require of learners to

engage in critical thinking and problem-solving. Creativity is based on the ability to translate imagination and ideas into action. In teaching and learning contexts connectivity and networking create opportunities for creativity and links with other projects or creations on the global digital platform. The computer plays the role of a cognitive tool and a resource for developing problem-solving creations.

Critical thinking plays a fundamental role in learning for both teachers and learners. Participants engaged in critical thinking during planning of learner activities, execution of duties, and completion of tasks. Participants confirmed that they carefully selected content, designed tasks, identified sets of skills to be imparted, conceptualised, developed pedagogical strategies and made adjustments by inclusion of digital tools and software in the teaching of digital literacy. Examination and analysis of digitally produced texts, communication reports on social media, and discussions with teachers indicated that participation in teaching and learning of digital literacy provides an opportunity for critical thinking and problem-solving. The creation of texts such as poems and essays, for example, creates a context for learners to use their experiences to formulate texts that communicate sense and logic to the readers thereof.

4.8.6 Conclusion

The main findings and the interpretation of the data on teacher's understanding of digital literacy, strategies and approaches used to teach and use digital literacy in English and the role of social media and visual literacy in the teaching of digital literacy are discussed in this chapter. The section also presents an analysis of how digital tools, connectivity, networking, and challenges on improving the teaching of digital literacy in township secondary schools are used for teaching English. Key points emerging from the study indicate that teachers are connecting with learners as individuals and in groups for academic group discussions, sharing, developing electronic documents, curating, communicating and transferring of English information for learning purposes by using digital connection platforms.

In the next chapter I present new insights drawn from the study and recommendations for future research on how digital literacy can be integrated in the teaching of English.

CHAPTER 5: SIGNIFICANCE AND RECOMMENDATIONS OF THE STUDY

5.1 Introduction

In the previous chapters I introduced the study, presented the literature review and conceptual framework, and stated the paradigmatic orientation, which influenced the choice of methods, data collection and analysis. The data were presented and analysed in chapter 4 and concluded with a discussion of the findings. The data were presented according to themes and patterns emerging from teacher initiatives on digital literacy and out-of-school digital literacy practices in English.

In chapter 5 I conclude the study by presenting a synopsis of the results, highlighting the significance of, and reflecting on the implications for classroom practitioners involved in teaching English as a second language. I also present recommendations to school authorities, educational planners, practitioners and researchers on policy formulation, curriculum innovation, teacher professional development and strategic implementation in view of the role of digital literacy in English and other subjects.

As alluded to earlier, the study was conducted in three secondary schools in the Tshwane North district of the Gauteng province. The selected secondary schools were predominantly located in township areas and were resource-constrained. Three teachers from each secondary school were selected for participation in the study, but at school C, one teacher could not fully participate because he was on sick leave. The study yielded useful and valuable information discovered through a qualitative data analysis process in a quest to find answers to the research questions raised in chapter 1. While the focus aimed at understanding teacher initiatives on the use and teaching of digital literacy, it also provided me with an opportunity to interact with English language teachers and to share their experiences in resource-constrained secondary schools. However, some of the views and experiences shared could not be part of this study because of my research focus. These views and experiences could be further explored in future research on the teaching of English.

I used multiple qualitative data collection methods and analysis procedures, which involved rigorous examination of data in a triangulated method, which resulted in the

emergence of themes and patterns. The use of *in situ* qualitative data collection, member checking, examination of documents and records in relation to interview notes and transcriptions helped to bring trustworthiness in my study (Morris 2015).

5.2 Summary of the study

Chapter 1 introduced the study and stated the challenges facing education in South Africa – particularly with regard to English language proficiency, digital competence and literacy in general. The above-mentioned challenges were coined in technologically driven curriculum change and innovation in resource-constrained environments. I indicated the importance and need for teacher resilience by adapting to new and adverse situations in order to attain their desired outcomes. I further alluded to the challenges that teachers face in daily classroom duties and sought to understand their initiatives in coping with the demanding needs of the profession. I clearly indicated that the use of digital tools in society and in schools had changed the education landscape for ever.

In chapter 2 I presented a review of literature on digital literacy and the pedagogical strategies used by teachers in different parts of the world, based on their contexts and curriculum design. I used diagrams to illustrate the relationship between key concepts in the teaching and use of digital literacy in English. I indicated the link between teacher professional practices, language learning theories, and the role of digital literacy and resilience (adapting to new and challenging situations) in English teaching. The review also included the use and importance of digital literacy in the English syllabus and its impact on the learners' lives at school and in the community.

Chapter 3 stated the fundamental philosophical paradigms in research. I opted for the interpretivist-constructivist paradigm for the study, which helped in constructing the research design and methodology. The paradigm informed my choice of research design, methodology, data collection instruments and analysis.

In chapter 4 I presented, analysed and discussed the data, thus answering the research questions of the study. Data were presented and simultaneously consolidated and interpreted. The discussion took into consideration the varying contexts, strength of viewpoints (convictions), human beliefs, values, and experiences that shape the teaching of English as a second language in resource-constrained environments. The strong convictions and beliefs were supported by the self-efficacy theory which indicates that

achievement motivates and reinforces behaviour to be repeated in problem-solving situations.

5.3 Situating the findings within the study's conceptual framework

The conceptual framework was used to explore the initiatives taken by English language teachers in adapting to use digital tools in English at secondary level. Based on the DBE policy regarding ICT use in schools, the study was conducted in natural settings of secondary school contexts. Township secondary schools are historically resource constrained and learners attending these schools are mostly from disadvantaged backgrounds, and as a result, have little awareness of the roles of digital technology in learning English as a second language. On the basis of the background of the research sites and the South African English syllabus, findings communicate that teachers are creating opportunities and devising strategies to teach digital literacy in English. As mentioned in the conceptual framework, the integration of technology in English language teaching takes cognisance of the language learning theories such as behaviourism, cognitivism and constructivism. The study also sought to explore English teachers' creative ability in technologically demanding learning situations and unpacked the nuances of their personal experiences in making adjustments to new technological demands in a resource-constrained space. The teachers' subject knowledge and its curation with digital technology awareness were probed in order to understand how learning theories provide insight into digital literacy practices. In this case, teachers' subject knowledge is important because it acted as a resource for their creativity.

I stated that the aim of the CAPS (DBE 2011) was to develop learners' knowledge, skills and communicative competence in English and the creation of a positive mind-set about the use of English in business, academic and social communication in the South African context. The development of knowledge and skills depends on the ability of teachers to use digital tools and to teach digital literacy with appropriate methods that empower learners for the world of work.

In chapter 2, evidence from research indicates that digital and language competence in English are important factors for young school graduates for participation in the economy because it provides a gateway for success in academic studies, knowledge repositories and business opportunities. In the South African context, the economy uses English for

communication in business despite the fact that eleven languages have official status. The above view is significant as digital technology development in the business communication landscape commands proficiency in both the common language of business (English) and the use of digital tools (digital competence). Belshaw (2012) investigated the role and significance of digital literacy for departments of education in Europe and strongly recommends participation in the digital space to be a civil right in order for both learners and teachers to become active participants in the global knowledge economy.

I realised that the teaching of digital literacy creates an opportunity to review how traditional language learning theories are merged with digital technology in order to improve learner reading and writing proficiency. Lotherington and Jensen (2011) posit that multiliteracies are a direct dividend from digital literacy practices and the multimodal text format provides learning opportunities for learners in the 21st century in line with global trends around reconfiguration of truth and knowledge authority. Findings from this study strongly indicate that teachers are taking initiatives such as collaboration, use of social media group chats, online facilities and communication networks for the teaching of English. Findings from this study also indicate that the teaching of digital literacy is not only about gaining skills and knowledge for the world of work, but also for shifting the mind-sets of the digital generation with proficient skills in English because the landscape will never return to traditional literacy practices. Zur and Zur (2011) and Hague and Payton (2014) say that multitasking, multimodality, instant messaging, connectivism and networking are features of the values and beliefs of digital natives. This study found that teachers and learners participate in the digital space and teachers struggle with pedagogic choices as well as digital competence. I need to indicate that one feature of the digital generation (iGeneration) or digital natives is a strong belief in instant rewards because of the way their minds function in the digital environment in which they grew up. The findings of the study strongly agree with critical views raised by scholars regarding the strategies used to teach digital literacy in English. Information gained from the literature review indicates that the creation of learning communities, collaboration, networking and sharing of information are digital literacy practices promoting proficiency in the use of English as a second language. This notion was confirmed by the participants in this study.

The most important aspects in this study were addressed and the research questions were answered despite the variations and circumstances which are indicated. I found that teachers were taking initiative and using strategies on the teaching and use of digital literacy in English with varying approaches based on the available digital facilities. The conclusions related to the research questions are presented in the sections below.

5.4 Conclusions in terms of the research questions

Main research question: How do teachers teach digital literacy in English in township secondary schools?

In terms of teaching methodology, this study concludes that teachers collaborate, connect and network on social media groups, create content, use visual images and symbols for communicating and teaching of digital literacy. Although some of these strategies have existed for some time, teachers are recreating learner tasks and activities integrated in technological contexts for the teaching of English subject content. The study revealed that teachers initiate strategies such as connecting learners to discussion groups, forming writing clubs/magazines, creation of cartoon groups and academic chat sessions in order to assist learners with reading and writing skills in English. Digital tools are used for transfer, storage and writing of digital learning material. The novel experience in the context of this study is teachers' innovative abilities to create, coordinate efforts, devise strategies, take pedagogic initiatives on digital literacy and connect learning communities in technologically resource-constrained environments leading to an effective learning process that improves learners' English proficiency in township schools.

Secondary question 1: What digital literacy initiatives do teachers take in teaching English in township secondary schools?

Teachers use digital tools for various purposes, which include PowerPoint presentations, typing texts, research, communication and storing information for different purposes. In other cases, teachers collaborate, network and use connections as initiatives on teaching digital literacy in English. The above-mentioned strategies are used to deliver content and develop language and digital skills for both teachers and learners. However, this study's findings reveal that participants experience difficult methodological choices because the CAPS (DBE 2011) does not specifically prescribe strategies for teaching

digital literacy in English. As mentioned in the paragraph above, creating tasks, options and activities that are technologically integrated and connecting learners to different social and digital networking sites are strong findings of the study confirming the innovative ability of township secondary school teachers on digital literacy in English.

Secondary question 2: What are the teachers' experiences in teaching digital literacy in English?

The study revealed that teachers struggle to make pedagogical choices because the policy documents do not specifically state the methodological requirements for digital literacy. As a result, teachers find it difficult as they lack digital competence and skills, as well as digital equipment to use in teaching digital literacy that can improve English language proficiency among learners. As a result, teachers initiate their own strategies, design their own activities and connect learners even in out-of-school literacy practices. Their experiences are also characterised by struggles to survive disciplinary challenges with learners, shortages of equipment and limited digital skills. Teachers have good intentions for teaching digital literacy in English but they lack skills and therefore take initiatives in order to meet their desired outcomes. The fascinating discovery is the resilience of English teachers surviving by collaborating, networking, sharing, curating, and adjusting to technologically-driven curriculum innovation in a resource-constrained context.

Secondary question 3: What challenges are faced by teachers in teaching digital literacy in English?

Semi-structured interviews revealed that some participants lack skills in teaching digital literacy because they do not have access to training facilities. This lack of skill is particularly common for teachers who have been teaching for some time and who did not receive any formal training on the teaching of digital literacy in secondary schools. The fact that digital literacy is not formally examined in any subjects except Computer Applications Technology (CAT) makes it optional for teachers to focus on teaching it in class. Despite the above-mentioned situation, young participants in this study raised concerns over the use of abbreviated language, emoticons and images common on the social media. According to Humphrey (2007) teachers' concern about cyber linguistics is about the pillaging, savaging, and wrecking of the purity of the English language. Participants also raised issues of cyber bullying, shortage of digital devices and

vandalism of digital equipment. The participants' main concern was that the content constructed and used for digital literacy practices was not examined.

The scarcity of computer technology in township secondary schools is a serious threat to the teaching of digital literacy in English. The situation is further exacerbated by school policies that forbid the use of cell phones during classes. This context technically eliminates the use and teaching of digital literacy in classes except in classes that have smart boards or smart phones supplied by the DBE. The exclusion of cell phones as a resource in the teaching of English creates a superficial resource constraint for learners, and consequently for digital literacy practices. Most of the challenges faced by participants were overcome by the strategies and initiatives mentioned in research sub-question 2. The novel discovery in this study is teachers' ability to generate activities, coordinate learning and teaching of digital literacy in such overcrowded resource-constrained schools, as well as the development of methodological options despite the adverse conditions described in chapter 3.

Secondary question 4: How do teachers adapt their classroom practices in order to teach digital literacy in English?

As a way of adapting to digital literacy demands, English teachers create discussion groups, connect with learners on social media platforms and are versatile in the use of digital facilities for teaching and learning (creation of texts and developing reading patterns for texts in different formats). This practice includes the use of smart boards and computer centres (creation of PowerPoint presentation, Microsoft Publisher documents and photo shopping pictures using smart phones for social media and learning platforms). Learners' and teachers' participation in the digital space creates writing opportunities in English, drawing of cartoons and other forms of visuals for communication and language learning as strategies for teaching of digital literacy for proficiency in English as a second language.

In other cases, participants collaborate with learners and teachers from other schools to participate in projects that support the learning of digital literacy in English. Participants highlighted the role and involvement of passive learners making contributions on platforms that are digitally based. At least learners assist each other on the rudimentary functions of digital tools while completing academic tasks integrated in English language learning while on digital platforms. The study also revealed that there is a strong link

between the DBE's communicative language policy and some of the digital literacy practices in terms of focusing on the ability to convey an important message. The teacher initiatives on teaching of digital literacy mentioned during interviews included the use of spelling competitions, creative writing (articles, short stories, poems and puzzles) in school magazines. The interesting aspect in the technologically integrated process is the learning experience that combines games, socialisation, sharing and curation – all connected and extended to out-of-school literacy practices. This is a new approach in township settings where teachers innovate and make use of available resources to support learners in resource-constrained environments.

5.5 Main themes emerging from the findings

5.5.1 Theme 1: Teachers' understanding of digital literacy in English

Theme 1 indicates that participants understand the importance of teaching and using digital literacy in English and are making efforts to implement government policies despite challenges regarding pedagogical prescriptions. Participants adhere to departmental policies and support the teaching and use of digital literacy in English although the official documents do not state or prescribe the methods, strategies and approaches that should be used to teach digital literacy.

5.5.2 Theme 2: Strategies and approaches used to teach digital literacy

Teachers are taking initiative on the teaching of digital literacy in English. The strategies and approaches used by participants include the use of magazines, cartoons, online group chats, and social media platforms for the teaching of English. Computers and digital devices are used for educational games, networking and collaboration among learners and teachers. In support of the strategies, the digital innovative practices create learning and teaching communities on the basis of availability of the connectivity and digital tools. In addition to the practices, teachers use social media for discussions of school work and social issues with learners. In this process teachers and learners use collaboration, connectivism, networking, group work and online team work to support the teaching and learning of English using digital tools. Other strategies include the use of video clips from YouTube, cartoons and pictures from Instagram as sources of information for storytelling, as well as the teaching of English in different contexts.

5.5.3 Theme 3: Challenges faced when teaching digital literacy in English

As mentioned in secondary question 3, a shortage of digital equipment, limited digital skills and vandalism are challenges that teachers face in the teaching of digital literacy in English. The development of cyber linguistics also poses a challenge to teachers particularly in communicating with learners on academic issues. Learners with negative attitudes towards the use of technology in learning English vandalise the equipment. The transfer of viruses from private memory devices to school computers also affects the teaching of digital literacy. It is under these circumstances that teachers in township secondary schools take initiative and devise strategies to teach digital literacy in order to improve proficiency in the use of English as a second language. However, teachers make adjustments and adapt to new situations by connecting and using available technology for teaching English.

5.5.4 Theme 4: Strategies of improving the teaching and use of digital literacy in English

Research findings indicate that the curriculum document needs to clearly state the methodological requirements and strategies for teaching digital literacy in English. Participants expect the curriculum authorities to authenticate their current practices and recognise out-of-school digital literacy practices. Training, provision of pedagogical guidelines and collaboration coordinated by the DBE is critical for the successful and effective teaching of digital literacy in English – particularly in resource-constrained township secondary schools. Participants were of the opinion that digital literacy should also be officially assessed or examined in line with the curriculum outcomes and objectives. This would prompt teachers and learners to take pedagogic initiatives seriously. Digital sharing of information, curation, re-mixing and redesigning are strategies to improve the proficient use of English as a second language in different learning contexts. For this study, creation of learning communities, connecting to information sources and transferring of learning experiences using digital tools are pedagogic initiatives for the effective teaching of English aimed at mitigating resource constraints in secondary schools. The practices provide insights to answer the research questions of this study. Figure 5.1 summarises the answers to the research questions presented in chapter 1.

5.5.5 Summary of the answers to the research questions

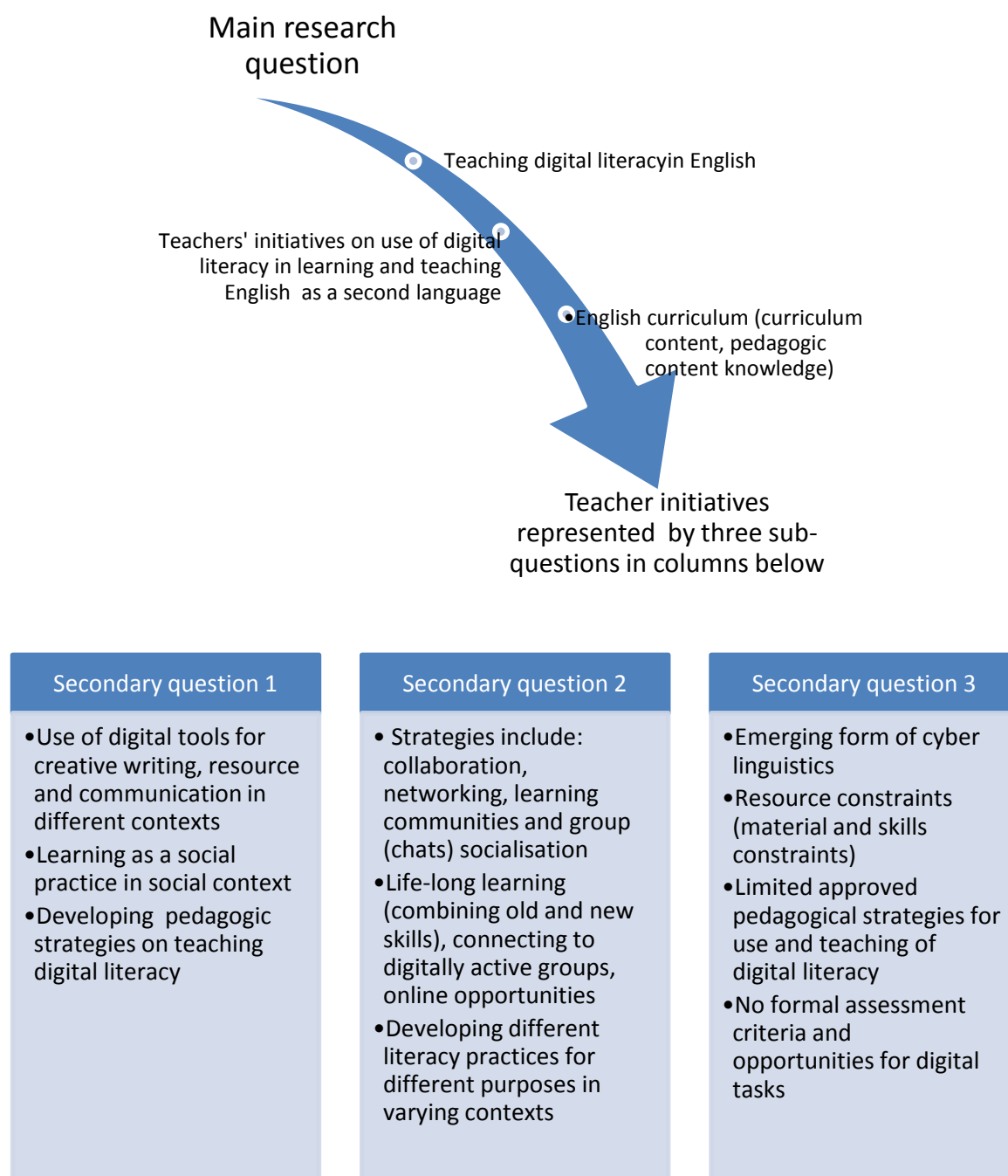


Figure 5.1 Summary of the answers to the research questions (own design)

Figure 5.1 indicates the main research question at the top followed by the findings of the study. The main research question indicates that the research direction is on digital literacy in English and that the exploration is part of teachers' adaptation in English

teaching. The guiding factors support teacher initiatives leading to the key findings of the study. The key findings are listed according to secondary question of the research. Secondary question 1 presented participants' understanding of digital literacy as a basic tenet informing actions and practice. It also elaborated on the opportunities in digital literacy practices and learning combinations coming up because of combining socialisation and English language learning in one mode. Sub-question 1 linked with sub-question 2 in that it presented the collective methods and strategies used by participants such as collaboration, networking and group discussion through social media and participating in constructing different texts in different modes. Sub-question 3 presented the challenges faced by English teachers, as well as the strategies for improving the teaching of digital literacy.

5.6 Implications of the study

Qualitative research creates opportunities and an understanding of phenomena that influence human action. In the qualitative research process, key questions bring insight and solutions, improve human practice and inform policy formulation and development in teaching and learning contexts (Creswell 2005). This study was conducted in the Tshwane North district. Although the three participating secondary schools formed a small sample, the four key areas of research could be addressed by data from this sample. The strategies used for teaching digital literacy in English contribute significantly to the learning of English in different contexts for the purpose of gaining proficiency in reading and writing using digital tools in the 21st century. The use of digital literacy creates opportunities for both teachers and learners in global life-long learning, research and innovation. In terms of the English syllabus requirements, there is a need for further clarification and authentication of teaching strategies to be used by teachers when teaching digital literacy in English. Teachers' initiatives and strategies are critically important in a bid to mitigate the skills gap on the teaching and use of digital literacy. Further research into the role of out-of-school digital literacy practices can be explored to develop pedagogy for the purpose of improving English proficiency of second language learners in South Africa.

5.6.1 New knowledge contributed by the study

The study findings yielded new knowledge culminating from the data. While the theoretical and practical significance of the study will be discussed later, this preliminary discussion foregrounds the critical discoveries. The new knowledge culminates from the concepts “pedagogical and digital experiences” discussed in chapter 2. From the literature review it is clear that the DBE (2011) recommends the inclusion of digital literacy in the teaching of English in schools, but teachers do not have the requisite skills to teach digital literacy. So, this study sought to explore teacher initiatives on the teaching of digital literacy in English. In this context, teachers in resource-constrained secondary schools are devising pedagogical strategies such as forming social network groups, presenting learners on social media platforms, and using supplementary digital tools to support the teaching of English as a second language. In township secondary schools learning communities with extended learning hours are created on the basis of the use of digital connections and social network groups for learning and teaching of English. The combination of learning and socialising for teaching and learning of English is quite novel in townships and significantly improves language proficiency. The findings from the study clearly indicate that these teachers take interesting initiatives for the teaching of digital literacy.

5.6.2 Theoretical significance of the study

The purpose of the study was to explore teacher initiatives on the teaching of digital literacy in English in township secondary schools. The study selected language learning theories integrated with resilience theories in an English pedagogy. The knowledge gap that became clear from a review of the literature is the lack of methodological strategies and skills by teachers on the teaching of digital literacy in English. The findings can be applied in other context but they cannot be generalised for all contexts, because contexts vary. The selected English language learning theories were integrated in the study. The application of both cognitivism and behaviourism in digital literacy study provided an opportunity for relevance of theories in the study. The result of the exploration was an understanding of the strategies of teaching digital literacy in English. Findings of the

study clearly support the basic function of both theories in that digital tasks and activities designed by teachers create thinking abilities and mental constructions (cognitive development), while the manipulation of digital tools provides stimuli (Behaviourism) for learners to explore more learning opportunities in English. This application of theories in English teaching and integration clearly demonstrates the importance of theories in the language teaching and learning process. The implication of the application of theories is that English teachers need to be aware of the dictates of the English language learning theories in their implementation strategies, and that theories will provide guidelines for their initiatives on the teaching of digital literacy in English.

5.6.3 Practical significance of the study

In answering the research questions, the study provided insight into teachers' initiatives on the teaching of digital literacy in English. I hope that the study will inform English teachers on strategies that could be used in teaching digital literacy in English in resource-constrained township secondary schools. I therefore state that this study found that teachers are creating opportunities and devising strategies to teach digital literacy in English in an effort to improve proficiency in the language. The study therefore fills the knowledge gap on how English teachers in resource-constrained township secondary schools can use available resources to support the teaching of English as a second language, and improve proficiency. Based on the findings, it is clear that besides providing opportunities for learners to digital literacy to solve language based problems, teachers using and teaching digital literacy provide scaffolding for learners to be independent critical thinkers and researchers. Initiatives such as creation of social media groups, networking with schools participating in digital literacy as well as use of web links to provide sources of information is practically important in the teaching and learning of English to improve proficiency. For example, social media and internet allow learners to do research on appropriate cartoons as a group, discuss and edit through collaborative processes although, while the writing is still an individual activity. The findings of the study provide insights into the strategies used to mitigate the pedagogical knowledge gap and alternatives in the absence of technological connection for the teaching of digital literacy.

By referring to progressive teachers I mean teachers who respond positively (adjust and adapt) to curriculum changes, integrate new concepts in their teaching, and apply real-life teaching strategies to prepare learners for life. Findings from this study imply that English curriculum planners need to take cognisance of teachers' pedagogic requirements, which involve technological integration.

Critical issues raised by teachers during the interviews were the lack of pedagogic guidelines for using digital literacy in English, and revisiting the policy on the use of cell phones in class. Teachers admitted to the disciplinary challenges associated with the use of cell phones during class, but they strongly believed that the bad practices could be controlled to the benefit of learners. One participant recommended a research study into models of controlling use of cell phones in class when teaching languages such as English. Participants also raised the issue that schools should make provision for cell phones as teaching tools for teachers, as chalk and dusters belonged to the past. Connecting and performing digital teaching tasks on personal cell phones at own cost seemed to be an unfair practice.

Finally, I challenge school authorities and the DBE to do something about teacher professional development with a focus on specific subject requirements – particularly English as a second language. Training teachers on how to operate a computer does not equate pedagogic strategies for teaching digital literacy in different subjects.

5.7 Reflecting on the potential limitations of the study

Limitations are constraints imposed on a study and often contextualise the study, thereby legitimising the process. The fact that the study was qualitative meant that I could not expand the population sample. Data collection was limited by financial limitations such as the administration of the interviews and travel costs to research sites. However, the in-depth interviews provided detailed information that was used to answer the research questions. In addition to the financial limitations, I was also aware of the limitations of the qualitative research design – particularly in dealing with subjective data and the extent to which findings could be generalised or that findings may not apply in other contexts.

5.8 Recommendations for future studies

The exploration of teacher initiatives on the use and teaching of digital literacy was conducted in the Tshwane North district and the results yielded an understanding of digital literacy practices in out-of-school connections and classroom practices. The recommendations of this study are categorised in three categories namely; policy formulation and development, teachers' views on digital literacy pedagogy, and practices and recommendations for further research.

I indicated that the aim of the study was not necessarily to duplicate studies on e-learning and ICT in education, but to discover and interrogate pedagogical strategies used by teachers in using and teaching digital literacy. In actual fact, the empirical impact on real-life experiences was one of the goals that were achieved. The study anticipates informing initial teacher development institutions, subject advisors at the DBE, policy makers, and stakeholders in education to review the teacher professional development programmes in line with learner needs and global trends. While the teaching of End-user Computing and Foundation English at some universities in South Africa is a noble idea, the intensification of the use and teaching of digital literacy at secondary level introduces critical skills (critical thinking, problem-solving, et cetera) at an early stage and benefits a greater percentage of matric learners who will not gain entry into tertiary education institutions. The current situation disadvantages school drop-outs and matriculants who do not qualify for tertiary education as they leave school with limited digital literacy skills.

5.9 Policy formulation and development

A policy is designed to provide control and management techniques of a system. While defining the term "policy" broadly, in this study policy refers to guidelines informed by legislation and traditional practices of groups, entities, institutions, and government departments for their operations (Torjman 2005:6). In relation to the focus of the study, I recommend that the Department of Basic Education should include pedagogical strategies to assist teachers in using and teaching digital literacy related to English. In fact, the methodology part of the CAPS needs to be reviewed in order to incorporate new strategies and the use of out-of-school literacy practices as legitimate initiatives for the

teaching and learning of English as a second language. The policy on digital literacy pedagogics needs to be supported by training that provides skills for all practising English (HL and FAL) teachers.

The policy should also clearly indicate how procurement of digital equipment in schools and use by learners can be facilitated. The guidelines should empower teachers on how to use digital literacy in the teaching of English. The policy should prescribe the strategies and network connections to be used. It should be more explicit on the strategies and provide detailed description of the process. In addition to policy formulation, the DBE needs to develop an assessment programme (National Examination) for digital literacy which covers digital literacy in English (and other subjects) and not restrict it to specialisation as in this case of Computer Applications Technology (CAT). In this way standardisation will be attained and teachers could benchmark their teaching and use of digital literacy on some level. The policy should be amended from time to time in order to shape teacher and learner relationships and participation in cyberspace. In support of the policy, monitoring tools and annual evaluation reports should be submitted in order to monitor progress on development and challenges in the implementation strategy of digital literacy in English.

The current position on the use and teaching of digital literacy makes it optional for teachers to participate because it is not assessed at the end of the academic programme. The advantage of prescribing the use and teaching of digital literacy alleviates the problem of teaching and learning resource materials such as textbooks because multiliteracies and multimodality create opportunities for learners and teachers to use videos, pictures, diagrams and other forms of digital content in the learning and teaching environment. Their use in digitally conscious communities will cut costs of printing and distribution of printed material (prescribed texts) which has caused a furore in some provinces of South Africa.

In addition to the policy on implementation, the DBE can recommend to all teacher training institutions to provide hands-on training on the use and teaching of digital literacy in English for all graduating teachers. The current running modules do not provide adequate pedagogical and practical training on the use of digital literacy resulting in teachers with limited digital competence skills deployed in schools. In order to realise the

millennium goals in education and training, digital literacy is a key component that needs a strong commitment from all partners (Belshaw 2012).

5.10 Township English teachers' views on digital literacy pedagogy

I realised that participants' transition from traditional methods to modern digital pedagogic strategies needs support, because the traditional approaches and language learning theories in a constructivist ideology help to provide for integrating knowledge constructed with the beliefs and values of the community (Belshaw 2012). I mean that social media communication and the use of films and videos in the South African context support a holistic approach to education that seeks to solve human problems in their environment. A movie taken from a township environment used to teach literature to learners from townships helps them understand their society and appreciate and value their practices (cultural, religious and environmental).

I commend the initiatives by some participants who attempted to develop guidelines for the teaching and use of digital literacy at school level and create integrated authorities for controlling participation in cyberspace. I suggest this kind of initiative should be expanded to other school subjects. The initiative has brought protection of vulnerable learners in cyberspace, encouraged participation on learning platforms and groups inculcated a culture of responsibility among learners, and groomed future responsible and accountable leaders. Typical examples are school magazine editorial practices, social media group chats that assist all discussions with monitoring and evaluation of the learning process.

From this study it is clear that teachers' roles in the digital age keep on changing and demand new sets of skills for effective teaching. Teachers need to be competent content reviewers, researchers and editors with advanced digital literacy skills to allow them to assist learners on most of the digital learning platforms such as WhatsApp, Facebook, Wikipedia, et cetera. The challenge is that the digital information explosion is so overwhelming that learners need the support of digitally competent teachers to select appropriate content, text formats, modes and levels to help them develop English language proficiency. The skills need to be integrated with pedagogical strategies such as collaboration, networking, group work, games and puzzles in order to engage learners at different cognitive levels for effective learning of English as a second language. This

can only be true when teachers become active participants on digital learning sites, and researchers and participants in the construction of knowledge on platforms such as Wikipedia. In this technological development and learning platform, learners are not *tabulae rasae* waiting to receive information from teachers, but are partners in constructing knowledge about themselves and solving life problems. In this type of learning, multiliteracies, multimodality, intertextuality and multiple reading pathways become critical skills and practices that learners need for their participation in the global economy.

5.11 Experiences of the researcher

The research that I undertook was a learning experience that one sometimes underestimates. After presenting a research proposal, I assumed that everything would go according to plan, but practical situations did not always occur as planned. In fact, I learnt about the related fields and complexities linked to digital literacy such as e-learning, ICT in education, e-education, digital competence, and electronic writing, all of which connect to a common field of digital or computer technology development in education. In this study, I reviewed literacies, related digital literacy to language learning theories, and learnt about psychological traits of adapting to new digital environments in teaching. This review created learning memories, shaped my philosophical paradigmatic configurations and informed my use of research instruments such as interviews, observations and document analysis. Reading a theory or using a research instrument does not necessarily lead to competence on the use or application thereof, but applying these in a research study does.

I found that conducting research interviews was not easy in the beginning. Selected participants were willing to participate but they wanted strong support documents to confirm how the information gathered was to be used, and that it was to be used for the study only. I realised that interviews are a very important instrument for data collection in qualitative research. I kept on going back to read about how to use interviews for data collection each time I attended an interview session. The purpose of going back to read was to develop best approaches and strategies of using them for data collection. Every such reading yielded improved views (Morris 2015). In the process I noticed the importance of practicing questioning techniques before interview sessions. This helped me to develop follow-up questions. Rehearsing the questions created an added

advantage on capturing non-verbal/body language communication during the interview session.

Regarding the interpretivist-constructivist paradigm, I concur with the philosophical view that knowledge is socially constructed through interaction (cf. chapter 3). The paradigmatic position helped to shape the interview discussions with participations as I connected the stories of experiences and linked them to learning theories. In this study, it was evidence from nuances, facial expressions, detailed examples and extracts from teacher's cell phones, excerpts and proofs from documents that confirmed the use of social media practices leading to English language proficiency. Interviews yielded subjective responses which could be analysed and patterned to communicate common phenomena. In this study interview data required *in situ* analysis and post-interview reflection (Morris 2015). This practice helped to rectify incorrectly captured details and compare terminologies used by participants to refer to digital tools. Reflection helped me to realise variations in terminology that actually referred to the same thing.

5.12 Final reflection

Nowadays technological developments and innovation take place rapidly, therefore, teachers, researchers, educationists and stakeholders need to stay abreast of the newest developments. I therefore recommend further investigation of pedagogical requirements for teaching with technology in ethically conducive spaces. This study could be expanded to rural communities in order to understand how resource constraints can be managed in the teaching of digital literacy. I could not do the study with more than three schools because resources did not permit for a broader context of study on an extended geographical area and sample population.

I realised that there was a need to understand different models that could be developed for assessing digital literacy in English. In most school subjects learners are still assessed using traditional examination procedures, but universities and other tertiary studies require competence in multiliteracies and multimodal formats. I challenge university lecturers and researchers to investigate the methodology required for teaching cyber linguistics, which dominates social media. The logic behind this challenge is to help standardise the developments on the communication landscape as the young generation

will continue to use abbreviated language, short forms, images and emoticons. Currently, the use of the shortened, abbreviated language and emoticons is not permissible in final examination assessments in South African secondary schools.

As alluded to earlier, this study intended to provide insight into the gap between the unelaborated aspirations of the English CAPS and the practical implications of curriculum implementation in secondary schools. The study created opportunities for researchers to find measures to legitimise teacher initiatives in teaching and using digital literacy, which has been deliberately misconstrued to mean e-learning programmes for all subjects across the curriculum. Although there is a strong relationship between e-learning and digital literacy (which was not the focus of the study) research studies could be undertaken on the need to unpack e-learning and its relationship to out-of-school literacy practices.

5.13 Conclusion

I confirm that English teachers are taking initiatives in the use and teaching of digital literacy in secondary schools as was evidenced by their use of digital facilities such as social media, internet, digital equipment and mobile devices to communicate and discuss subject learning material in and out of school. The learning platforms, experiences and learner tasks play a critical role in providing extended opportunities for learning English as a second language in class and even after normal school hours (extended learning opportunity). New methods of learning through collaboration, networking, texting and group chats are essential for simultaneous socialising and learning.

In the process of integrating new digitally-based methods of learning it is important to retain our cultural values embedded in languages. It is distinctly important that digital literacy accommodates translanguaging, languaging and biliteracy in its practices, thereby creating opportunities for indigenous cultures to find space in the teaching and learning of English as a second language, in preparation of learners for the social world and the work environment. Digital literacy is about partnerships, relationships, connections and combined efforts for learning and teaching global knowledge.

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Addendum A: Interview questions for the English language teachers

1. What is your understanding of digital literacy in language teaching?
2. What is your attitude towards digital tools in education and teaching digital literacy in English language?
3. What does the Department of Education Policy stipulate for the teaching of digital literacy in English language curriculum pedagogy?
4. Which digital tools and software are you proficient in using when teaching digital literacy in English language teaching?
5. What strategies and initiatives do you use to teach digital literacy in English language curriculum pedagogy?
6. Which challenges are you facing in teaching digital literacy in township secondary schools?
7. What training do you think will support the teaching of digital literacy in township secondary schools?
8. How have you tried to overcome the challenges in teaching digital literacy?
9. What are the differences and similarities between teaching digital literacy and literacy from a traditional/autonomous point of view?
10. What do you think could be done to help support the teaching of digital literacy at secondary level in township secondary schools?
11. Do you have any recommendations to improve the plight of English language teachers teaching digital literacy in township secondary schools?

Thank you for your participation in this study

Addendum B: Group interviews with English language teachers

1. What is your understanding of digital literacy in English curriculum pedagogy?
2. Do you think digital literacy is important and should be taught in secondary schools in townships?
3. What are the digital skills that you are proficient in and capable of using for teaching secondary school learners?
4. What group initiatives and strategies have you taken to support the teaching of digital literacy in township secondary schools?
5. What are the pedagogic differences between digital literacy and the traditional/autonomous model approach to literacy?
6. What connections and networks do you have as a group with other subject teachers, schools, districts or online sites for the teaching of digital literacy?
7. How often do you use digital tools and what aspects of English language do you teach with digital tools?
8. What are your challenges in relation to the teaching of digital literacies at secondary level?
9. How do you suggest you can overcome the challenges as a group and as individual language teachers in township schools?
10. What are your recommendations to education authorities on the teaching of digital literacies in English language?

Thank you for your participation in this study

Addendum C. Letter to school principals

The School Principal

.....Secondary School

Dear Sir/Madam

PARTICIPATION IN RESEARCH STUDY ENTITLED:

Exploring teacher initiatives on teaching digital literacies in English

I wish to thank you for your kindness in voluntarily accepting the invitation to participate in my research study which involves working with three English language teachers on digital literacy. The study comprises of interviews, document analysis of learner’s activities planned by the teacher and observation of teacher competence skills on use of digital tools in planning and executing English language digital literacy lessons.

The demonstration lessons observation will be audio recorded, and the interview audiotaped. I would like to make copies of the relevant digital literacy tasks for learners.

I shall make an appointment to meet with you prior to the commencement of data collection for a formal discussion session. In the session, I will explain all processes and procedures, so that the study is conducted in a manner that serves the purpose for which it is intended. I will make all documents available and clearly elaborate the purpose of the study and the procedures that I anticipate to take.

I thank you once more and I believe the study will benefit the school in matters relating to English education and curriculum delivery, which in turn will benefit our learners.

Attached please find the informed consent form to be signed by participants.

Yours faithfully

.....

C.Rwodzi

Addendum D: Informed consent for school principals

INFORMED CONSENT FORM

I, voluntarily accept to participate in this research study. I am fully informed and I understand all the procedures, processes and the purpose of the study. I also understand that I may withdraw my participation at any time.

Parent's signature: Date:

School principal's signature: Date:

Researcher's signature: Date:

28 September 2016

Addendum E. Letter to participating learners

Dear Learner

PARTICIPATION IN RESEARCH STUDY ENTITLED:

Exploring teacher initiatives on teaching digital literacies in English

Sometimes when we want to find out something, we ask people for information to help us explain what we need to know. We then do what is called a project or research. I would like you to take part in this project so that you can help me find out what I need to know.

Let me tell you about the project first. This project will give me the chance to find out how your teacher uses digital skills in the classroom. To help me do this I need to video record a lesson where you will be in class.

I would like to ask you to be part of this project as your parents/guardians have already agreed that you can be part of this project if you want to. If you don't want to you don't have to. Everything was explained to your parents/guardians and they said you could take part if you wanted to. You can talk to them or your teacher or any other adult you trust first before you decide if you want to take part or not. This is what will happen: I will video record the lesson and so people will be able to see your face and hear your voice if I decide to show the video footage at discussions. If you wish to, you may choose a pseudonym and I promise not to tell anyone your name. You can also decide to let me use your real name if you want to. Just let me know.

If you do not want to ask or answer questions during the lesson, you don't have to. If you do, all of your answers will be kept private. No one, not even someone in your family or any of your teachers will hear your answers.

You can ask any questions about this project any time. If you agree to take part and you have questions later that you didn't think of now, you can ask me when I visit your school next time.

You do not have to take part in this project. No one will be upset or angry if you don't want to do this. If you don't want to be in this project you just have to tell me. You can say yes or no and if you change your mind later you can quit any time. It's up to you.

Writing your name here means that you agree to take part in this project and that you know what will happen during the project. You also agree that I can take video recordings of you during the project and share these images during discussions as well as reports that I write about the project. If you decide to quit the project, all you have to do is tell me.

Yours sincerely

Christopher Rwozi

Addendum F. Assent form for learners

INFORMED ASSENT FORM

I, voluntarily agree to take part in this project. Everything has been explained to me and I understand what will happen. I also understand that I may withdraw my participation at any time

Name of learner

Grade

School

Date

Learner's signature

Addendum G. Letter to the participating English teachers

28 September 2016

Dear English Language Teacher

LETTER OF INFORMATION AND CONSENT

My name is Christopher Rwodzi and am a PhD student at the University of Pretoria, South Africa. I need to conduct a research project in fulfilment of the requirements of the degree programme and would like to invite you to participate in this study. **My research topic is: Exploring teacher initiatives on teaching digital literacies in English**

The aim of this study is to explore the pedagogical strategies and initiatives taken by teachers in the use of digital literacies in secondary schools. To achieve this aim I need to collect information from you as teachers. You are hereby requested to participate in this research study which involves responding to a set of questions that you will be asked in an interview. Your responses to the open ended-questions will be audio and video recorded in order to help with data analysis. Furthermore, I need to view documents such as lesson plans, work schedules, policy documents and learner activities. Lastly, I would like to observe you while teaching which I will also video record for analysis. The research may help current practising and future teachers in English curriculum pedagogy.

Participation in this study is voluntary. You may withdraw from participation at any time without any negative consequences, and the data would be destroyed should you withdraw. Please be assured that all information will be treated with the strictest confidence and your personal particulars will not be divulged to any person. Your identification will be protected as I will use a pseudonym when referring to you.

I do hope that this letter provides you with adequate information to enable you to consider giving your consent to participate in the proposed study. In order to grant your consent to participate in this study, you are requested to sign the *Informed consent form* attached to this letter.

Thank you for your time and consideration in this matter.

Yours sincerely

Christopher Rwodzi

christopherrwodzi@yahoo.com

0789643533

Dr L De Jager (Supervisor)

lizette.dejager@up.ac.za

0124205527

Addendum H: Informed consent form for participating teachers

INFORMED CONSENT FORM

I.....hereby agree/do not agree to participate in the above-mentioned research study.

The purpose and nature of the study has been explained to me in writing. I am participating voluntarily. I give permission to Christopher Rwodzi to interview me and to observe my lesson/s. I understand that these will be audio- and video recorded.

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that anonymity will be ensured in the write-up by disguising my identity through the use off a pseudonym.

I understand that disguised extracts from my interview may be quoted in the thesis and any subsequent publications if I give permission below:

(Please tick one box :)

I agree to quotation/publication of extracts from my interview

I do not agree to quotation/publication of extracts from my interview

Participant's Signature _____ Date _____

Full name (please print):

Contact number:

Email address:

ADENDENDUM I: Findings from group/individual interviews with teachers in the selected schools

Broad View	Responses from participants
Teachers' understanding of digital literacy	<p>English language teachers understand digital literacy as: Teaching of computer literacy in English language class.</p> <ol style="list-style-type: none"> 1.Integration of technology in different subjects (Languages included) in teaching and learning programmes. 2. Ability to use different computer software for different purposes including administration and research in English language teaching 3. Learning of English language as a second language using digital technology 4. Using slides when teaching but mostly for science subjects and research in English language 5. Using a computer for research and communication in English language teaching 6. Ability to use a computer for office work and business purposes in English 7. Data capturing and processing in education 8. Computing statistical information and creation of files and records 9. Reading and writing using digital tools 10.Ability to use computer software and internet programmes for teaching and learning 11.A social practice of using digital tools for communicating with friends on social media for both business and academic purposes 12.Ability interpret, analyse, evaluate, create, communicate and share information using digital tools
Importance of digital	Participants indicate that digital literacy is important for:

<p>literacy in English language curriculum</p>	<ol style="list-style-type: none"> 1. Communication with learners and colleagues during discussion of school work 2. Creation of a network and a community of learners and teachers on the digital platform 3. Accessing the internet and get up-to-date information on learning of English language 4. Creating an awareness on other literacy practices such as information literacy, environmental literacy and visual literacy etc 5. Reading and writing strategies using digital tools 6. Keeping the school graduates at the same standard with the international community on communication and English language learning 7. School learners to have a digital literacy awareness and to develop skills in communication in the global village 8. Preparing learners for the modern work environment which uses technology in almost every industry 9. Computers make English language teaching exciting and motivating as we teach the subject content 9. Digital literacy is about learners learning to be creative and sharing knowledge and skills in English language 10. Digital literacy has become a global practice recommended by language education experts. 11. Digital technology has become an imperative business and life partner the world over and has to be included in teaching English language as a medium of communication 12. English language has dominated communication on the internet and therefore digital literacy supports other benefits of English language proficiency 13. Access to global employment and other economic opportunities has been realised through digital literacy and participation. 14. The teaching of digital literacy is part of adaptive resilience
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	to English language in the digital age
Stipulations from the department of education on digital literacy	<p>Teachers stated that:</p> <ol style="list-style-type: none"> 1. CAPS Documents recommend technology integration across all subject disciplines including English language 2. Learners should learn computer skills and apply to different subjects including English language 3. Digital literacy connects and provide virtual presence in the global village
Software and skills proficiency by teachers for digital literacy	<p>Participants are familiar with:</p> <ol style="list-style-type: none"> 1. Microsoft office Word Processing, Microsoft Excel, Microsoft PowerPoint presentation and File management but limited internet use skills especially research sites 2. Some teachers do not have proficiency in subject specific software especially those relating to teaching of English language eg English Word Power 3. Some teachers are able to use the internet to browse and search information that is used for teaching English language
Strategies and initiatives by teachers on teaching digital literacy	<p>Participants use the following strategies and initiatives on digital literacy:</p> <ol style="list-style-type: none"> 1. Creation of social media discussion groups to assist learners with homework and electronic writing skills 2. Online quizzes and puzzles for English language games 3. Cartoon groups and debate club group on social media 4. Sharing and curating pictures and cartoons related to English language academic discussions 5. Directing learners to do tasks using internet sites eg design of a website using wix.com templates 6. Encouraging learners and teachers to teach and use digital literacy during class time or for out-of-school literacy practices 7. Teachers use digital literacy to motivate learners to get down to read and respond to questions

	<p>8. Digital literacy practices provides opportunities for learners to practice, modify, create and analyse content when they link with colleagues and teachers on the cyber space</p> <p>9. Digital literacy provides access to a variety of international cultures on the internet</p> <p>10. Provides opportunities for socialisation with peers in academic issues especially English language</p>
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Responses for Question 6 to 11 on teaching and use of digital literacy

Broad view	Responses from participants
Challenges faced when teaching digital literacy	<p>Participants indicated that they are challenged by:</p> <ol style="list-style-type: none"> 1. Lack of digital technology equipment in the school 2. Teachers' lack of skills and an awareness on digital literacy teaching in English language 3. That digital literacy is a non-examined subject or aspect so teachers do not regard it as a serious aspect because no subject specific exam at the end of the year. 4. Learner-computer ratio is too high with limited access to the computer centre-45 minutes only in two weeks. 5. Teachers' struggle with disciplinary problems when classes are overcrowded- Learners destroy digital equipment 6. Learners have differing levels of digital competence such that teaching elementary content or teaching the gadget discourages learners with advanced skills 7. Learners that crave to access harmful sites and other non-academic pages such as fashion, music and drugs on the cyber space etc

	<p>8. Lack of school policy on use of digital tools such as cell phones for teaching English language in the school</p>
<p>Suggested training for effective teaching of digital literacy</p>	<p>Participants suggested that:</p> <ol style="list-style-type: none"> 1. Formal training on digital literacy methodology and awareness in the school 2. Induction on general ICT teaching philosophy and concepts such as connectivism, networking and collaboration 3. Online communication with learners even after school for assisting with homework and other academic tasks 4. Awareness on educational gaming based on digital technology
<p>Overcoming challenges in teaching digital literacy</p>	<p>Participants said:</p> <ol style="list-style-type: none"> 1. Informal groups organised for the learning of digital skills to be used in the teaching of English 2. Creation of social media groups for online discussions and communication 3. Partnership in mentorship with student teachers from universities who are currently studying New literacies for teachers 4. Learning from the learners on how to navigate some supporting software and other online facilities 5. Reading online resources on approaches to digital literacy 6. Continuing and lifelong education on digital literacy and teacher professional development
<p>Differences and similarities in teaching digital literacy and literacy from a traditional view</p>	<p>Participants indicated that:</p> <ol style="list-style-type: none"> 1. Digital literacy creates more learning opportunities than traditional approaches 2. Learners are motivated to do tasks on digital

	<p>literacy as compared to the monomodal literacy tasks</p> <p>3. Digital literacy is associated with modernity with all the anticipated benefits of globalisation and digitalisation while the traditional approach is understood as primitive literacy practice</p>
<p>Promoting the teaching of digital literacy in township secondary schools</p>	<p>Participants recommend that:</p> <ol style="list-style-type: none"> 1. There is need for more digital tools and network 2. Creation of subject communities especially in subjects such as English language 3. Change of policy by schools on the use of cell phones in class for teaching and learning 4. School online examinations and other formal tasks 5. Incorporate social media in teaching and learning of English language and writing tasks 6. Introduce cyber linguistics as a subject in schools 7. Connect learners to other out-of-school literacy practices and platforms
<p>Recommendations on the professional welfare of teachers on the teaching of digital literacy</p>	<p>Participants recommend that:</p> <ol style="list-style-type: none"> 1. Teachers need professional support that include training on digital literacy pedagogy 2. Provision of material resources in overcrowded classes eg secondary school tablet initiative in Gauteng that is supported by MEC for education 3. Provision of incentives for teachers taking up initiatives to train other teachers and committing themselves to digital literacy teaching 4. Strengthening digital literacy practices and networking among teacher professional associations 5. Empowering secondary school LTSM (Learning

	and Teaching Support Material) teams to procure digital equipment and train teachers on their use for subject teaching
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Teachers' responses on questions regarding the use and teaching of digital literacy

Broad View	Responses from participants
Understanding of digital literacy by English language teachers	Participants understand digital literacy to mean: 1. Use of digital tools in teaching English in secondary schools
Importance of digital literacy in English language syllabus	2. Support learning of English as a second language. 3. Improves reading and writing proficiency
Teachers' digital skills proficiency	Teachers' digital skills proficiency is a result of: 1. Lifelong learning on teaching with digital technology 2. Learning from colleagues in the school's Department of English language and other departments 3. Interaction with proficient teachers, friends and family members N.B. None of the teachers has a formal qualification on teaching English language with technology

Teacher initiatives, pedagogic differences and connectivity

Broad View	Responses from participants
Teacher Initiatives/ Strategies in teaching	Participants' strategies and initiatives include: 1. Teaching learners to look for information on the

English	<p>internet by searching for articles and publications</p> <ol style="list-style-type: none"> 2. Using wix.com to create subject sites and to design websites on templates 3. Creation of discussion groups on social media that are controlled by the teacher 4. The exceptional use of cell phones to teach communication in class during English language lessons 5. Teaching electronic reading and writing of different types of texts/text genres 6. Connecting groups via the internet and online discussions for homework and other academic inquiries 7. Using PowerPoint presentation to present content in a lesson eg comprehension passage, pictures, videos and cartoons and guidelines on English language essay writing 8. Tasks on the use of Word Processing tools such as spelling and grammar checkers, change of font size, type and other custom animation functions 9. Using online dictionaries to find meanings of English language words
Pedagogic differences on digital literacy and autonomous models	<p>Participants indicate that pedagogic differences are that:</p> <ol style="list-style-type: none"> 1. Digital tools provide opportunities for multiliteracies and multimodalities while autonomous approach uses single directional format in literacy 2. Access to digital facilities and functions such as custom animations, online references and versatility while the traditional approaches use one directional way in reading 3. Digital literacy connects with other opportune literacy practices such as ability to transfer,

	<p>publish and invite comments from the community of practice and traditional methods have limitation on opportunities</p> <ol style="list-style-type: none"> 4. Online English learning activities provide instant feedback and motivates learners to proceed to the next level of learning without limitation 5. Creation of online English learning communities with teachers as mentors and partners in a lifelong learning programme
<p>Connections/ networks available in the district</p>	<p>Participants said that:</p> <ol style="list-style-type: none"> 1. English language teachers have cluster connections that are mobilised by the district administrative structures that can be used by digital connection for efficiency 2. Schools connect and network on moderation of tests and tasks for Annual National Assessments (ANA) for different subjects at grade 9 level and use group chats to share information and variations on task memoranda 3. English language teachers are also free to connect to national and national organisations and institutions that work on the teaching and learning of English as a second language 4. Connection with the National Department of Basic Education links secondary schools teachers and learners and get access to documents such as the Curriculum Assessment Policy Statement, past examination question papers, policy documents and guidelines on the use of digital tools for digital literacy in teaching

Access, use, challenges and options in English language digital literacy teaching

Broad View	Responses from participants
<p>Access to digital tools and use of digital literacy in English language curriculum</p>	<p>Participants indicated that:</p> <ol style="list-style-type: none"> 1. School has computer centre but access is limited because the computers are fewer for overcrowded classes 2. Learners access the computer centre once in two weeks on condition there are no other disruptions such as poor connectivity 3. Teachers can access the computer centre after school provided they make a booking in advance 4. Computer centre has only 40 workstations and a single printer 5. Teachers use online dictionaries and thesaurus, Wikipedia Encyclopaedia and other information reference sources for teaching and research on English language 6. Learners and teachers access information from the online press sources such as current news in English teaching from the internet 7. Different parts of speech in English language are available on the internet and both teachers and learners can access and use them in their reading and writing on the basis of digital literacy proficiency 8. Digital tools are also used for sending e-mails, posting messages on Facebook, blogging and other online facilities by learners and teachers 9. Connecting and networking with friends and relatives using digital tools for communication if the network is available and digital skills proficiency
<p>Challenges in the teaching and use of</p>	<p>Participants said that the challenges in teaching digital literacy in English language include:</p>

<p>digital literacy in township secondary schools</p>	<ol style="list-style-type: none"> 1. Limited resources ie Reliable network connection, computers, tablets, cell phones and smart boards 2. Lack of skills among teachers particularly old teachers who are not keen to train on use of technology in teaching 3. Negative attitude towards the use of digital literacy by some teachers and learners in the teaching of English language 4. Limited access to online connection by learners from the township and informal settlements 5. Teachers and learners struggle to pay the costs of connectivity and network due to low income levels of both teachers and parents 6. Cyber bullying, cultural distortions, pillaging of purity of language on cyber space and access to harmful content 7. Learners from poor backgrounds do not have smart phones and do not have access to internet connection 8. Learners are more interested in social issues such as the fake news, grapevine and other forms of gossip at the expense of academic work when they are on cyber space 9. Digital literacy is not formally examined and teachers therefore have options not to teach or use it 10. The Department of Basic Education has not taken an initiative to train teachers on digital literacy pedagogics 11. Training on e-learning should not be understood to replace or stand in for digital literacy for English language teaching by the Department of Basic Education
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	<p>12. Teachers and learners do not take information from social media such as Facebook , tweeter, WhatsApp and Instagram as authentic because of corruption and scandals</p> <p>13. Secondary schools do not have a pragmatic policy on the teaching and use of digital literacy in English language in schools</p>
<p>Overcoming challenges in the teaching of digital literacy</p>	<p>Strategies used by participants to overcome challenges are that:</p> <ol style="list-style-type: none"> 1. Creation of learning communities and subject connections to remove the communication barrier 2. Department of Basic Education and schools develop modules and staff development programmes on technology integration to support the teaching of digital literacy 3. Digital literacy should at least be examinable in some school subjects that includes English language 4. Partnerships between schools, community and private sector communication/digital technology business should be developed and strengthened to help support the teaching of digital literacy 5. Local authorities and national government should provide WiFi hot spots in secondary schools to support the MEC (Gauteng) school tablet initiative 6. University expertise service should be extended to provide support to learners and teachers on the pedagogy and use of digital literacy in secondary schools 7. English teacher training programmes at universities should cover digital literacy comprehensively in order to produce effective digital literacy strategies

<p>Recommendations to education authorities on the teaching of digital literacy</p>	<p>Participants recommend that:</p> <ol style="list-style-type: none"> 8. Policy on ICT should clearly state that digital literacy should be taught 9. Provide modules and in-service training on old cadres to empower them on teaching of English on digital literacy 10. Proficiency in use and teaching of digital literacy should also be a prerequisite for teachers in secondary schools 11. English language facilitators should provide guidance on the teaching of digital literacy in English language 12. Digital literacy competence and practices should also be examinable in English language curriculum 13. Planning for digital literacy needs to start at national level so that secondary schools can take it seriously 14. Mobilisation of digital resources should not only be the task of school authorities but private sector participation is critical 15. Parents should be prepared to pay for digital literacy costs for the teaching and learning of the subject in the school 16. Research into use and teaching of digital literacy by secondary school teachers should be intensified by both the Department of Basic Education and universities
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Responses from English language teachers from schools

Broad view	Responses from participants
Understanding of digital literacy in English language	<p>Participants understand digital literacy as:</p> <ol style="list-style-type: none"> 1, Use of computers to support reading and writing in English as a second language in township schools
Importance of digital literacy	<p>Participants indicate that digital literacy is important for:</p> <ol style="list-style-type: none"> 1. Providing learning skills and connects with the digital world 2. Participation in a wide variety of learning experiences across regions and different social contexts 3. A modern way of learning incorporating the use of digital tools 4. Presentation of information in different formats and creation of learning communities 5. Developing skills and attitudes required in the 21st century economies and the global village 6. Proficient ways of learning English Language 7. Exposure to new paradigms and approaches in English language teaching and learning 8. Fulfilling the secondary school curriculum requirements
Teachers' skills proficiency	<ol style="list-style-type: none"> 1. Both teachers (Mr Baloyi and Ms Vuma) are proficient in the use of computers and internet for teaching and learning 2. Creation of subject sites through use of wix.com and communicating with learners on social media and internet 3. Have skills in research and writing academic articles 4. Proficient with online dictionary use and other English language teaching tests and exercises
Teacher initiatives and	Participants indicated that their initiatives and strategies

strategies on teaching and use of digital literacy

include:

5. Creation of English language subject communities
6. English language group social media chats and cluster virtual meeting discussions
7. Sharing English language class activities for different grades and genre for homework and individual studies
8. Sharing teaching notes and challenges in teaching English language as a second language
9. Learning new methods of teaching with ICT from internet resources and discussing with fellow language teachers
10. Project based learning for learners with smart phones and internet at home (Tidal Wave-English language club magazine is a product of digital literacy practice at school)
11. Forming social network group chats for discussion of English language issues such as topics for debate and meanings conveyed by cartoons in newspapers
12. Teachers teach colleagues in the English language on the use of digital tools for teaching
13. Teachers enrol for staff development seminars and workshops for training on the use of digital technology in teaching digital literacy
14. Postgraduate studies in education at most universities provide tuition on the teaching and use of digital literacy in English language
15. Electronic writing taught by teachers during English language when learners are taught essay writing using a computer for grade 9 learners
16. Use of e-mails for communication with learners on English language discussions

	<p>17. Watching videos for the teaching and learning of literature in English eg Macbeth, Maru, Merchant of Venice etc</p> <p>18. Teachers take initiatives to teach themselves on the use of digital tools in English language and role of digital literacy in learning the subject</p> <p>19. Using smart boards to save work, watch videos and for PowerPoint presentations</p>
<p>Pedagogic differences in teaching digital literacy and autonomous model approach</p>	<p>Participants compare and contrast pedagogic differences in the following way:</p> <p>20. Teaching digital literacy is exciting and engages learners on critical issues particularly of a young age while the traditional methods are boring and tedious</p> <p>21. Digital literacy teaching involves a collection of skills which include use of digital tools proficiency and integration of knowledge while traditional methods have less skills</p> <p>22. Autonomous/traditional methods place the teacher at the centre of teaching and as the only source of knowledge and digital literacy approaches has multiple strategies and sources of information</p>

Responses from participants on connectivism, networking and sharing in the teaching and use of digital literacy

Broad view	Responses from participants
<p>Connections and networks in digital literacy teaching</p>	<p>Participants say that:</p> <ol style="list-style-type: none"> 1. Connections link the learning community to the internet 2. Networks include service providers such as Vodacom, MTN, Cell C

	<ol style="list-style-type: none"> 3. Networks and connections have WiFi facilities for mobile utilities 4. Links with national and district is through web links, elearners download Umalusi question papers from the South African National Department's official website and use them for other online discussions 5. Subject networks and group social media chat sessions for district and circuit discussions 6. Social network discussions, podcasts on subject sites and group chats involving academic activities 7. Creation of links and networks among group members and connecting to other out-of-school participation
<p>Use of digital tools for teaching of digital literacy in English language</p>	<p>Participants say that:</p> <ol style="list-style-type: none"> 1. Learners use subject sites to complete homework 2. Teachers use the internet for references and other teaching strategies 3. Connecting to social media chat groups and network to transfer and communicate English language teaching activities such as marking guides and question papers 4. Accessing the internet as a source of information on literature genre commentaries 5. Modifying, curating and shaping themes, content and English language aspects to suit the South African English curriculum context 6. Using digital literacy as design tools for visual literacy 7. Digital tools are used as record keeping and administrative equipment in secondary school English teaching

	<p>8. Storage tools for school administration documents, profiles and important pictures relating to history of the school</p>
<p>Challenges faced by teachers and learners in teaching and use of digital literacy</p>	<p>Participants' challenges include:</p> <ol style="list-style-type: none"> 1. Lack of adequate time and facilities in the school to pay attention to digital literacy demands 2. Lack of pedagogic expertise to teach digital literacy in English 3. Learners do not have access to digital connections for online participation 4. Negative attitude from learners who are not techno-savvy 5. Domination of harmful content on cyber-space such as pornography, fake news and invasion of privacy as well as cyber etiquette. 6. Learners do not have proficiency in use of digital tools thereby making it difficult to teach digital literacy 7. Some of the English language teachers have a negative attitude towards the use and teaching of digital literacy 8. Some teacher understand the use of digital tools to teach English and digital literacy as additional duties 9. Learners from disadvantaged families do not have access to internet connection at home and skills proficiency is very poor 10. Student-computer (PC) ratio at school limits effective use of digital tools for digital literacy practice 11. Discipline among learners is of great concern because they vandalise digital equipment
<p>Overcoming challenges</p>	<p>Participants indicated that:</p>

<p>in the teaching and use of digital literacy in English language</p>	<ol style="list-style-type: none"> 1. Promoting and encouraging learners to use digital tools for digital literacy in other facilities such as internet café 2. Encouraging learners to buy and connecting digital tools in cases where financial resources are available 3. Encouraging learners to use weekend school and access computer centre for completion of digital based tasks during weekend 4. Forming chat groups that are controlled by group managers to reduce access to harmful content 5. Teachers in the English department are encouraged to give their learners and partners to warn learners on cybercrime and abuse 6. Teachers recommend learners to adhere to cyber ethical practices such as adhering to academic content only 7. The department of English language in the school recommends subject sites that are also posted as links to discussion groups and chat sessions
<p>Recommendations to the education authorities on teaching of digital literacy</p>	<p>Participants recommend education authorities to;</p> <ol style="list-style-type: none"> 8. Develop modules on the digital literacy pedagogy 9. Examine of digital English language teaching at national level despite the existence of CAT(Computer Applications Technology) often taken as an optional subject in schools by IT (Information Technology) learners 10. Secondary school tablet initiative by the MEC should cascade to other levels in schools 11. Encouraging private sector participation in capacity building of the digital landscape infrastructure for effective English language learning in township secondary schools

Addendum J. Biographical data for participants

Table 4.1 Secondary schools, teachers 'names, qualifications, years of experience and levels taught

Name of school	Name of teacher	Sex	Teaching Qualifications levels	Levels/Grades taught	Teaching experience
A	Mr Phala	M	Bachelor of Education (English and Sepedi)	Grade 8,9,10,11	6
A	Mr Mafoko	M	Diploma in Education	8,9,10	16
A	Mrs Zuki	F	Diploma in Education	8,9,11, 12	18
B	MrMudau	F	Diploma in Education	9,10,11,12	12
B	Mrs Nkabinde	F	Certificate in Education	8,9,10	23
B	Ms Sithole	F	Bachelor of Education degree	10,11,12	4
C	Mr Baloyi	M	Bachelor of Education	9,10,11,12	5
C	Ms Vuma	F	Bachelor in Education (Zimbabwe)	9,10,12	8
C	Mr Mathe	M	Certificate in Education	8,9,10	13

Addendum K: Lesson observation guide

Activity	Focus of observer
Teacher demonstrations	Digital competence skills Computer programmes used English tasks being taught Learners' responses
Learners activities	Digital skills Motivational aspects
Visual content	Pictures Images Texts

Addendum L: Tshwane North district approval letter



Enquiries: MP NTSANGASE
Tel: 012 543 1203
Reference: 22/16/1

TO : MR C RWODZI
FROM : MS SL MOLOBI
DISTRICT DIRECTOR: TSHWANE NORTH
DATE : 03 MAY 2017
SUBJECT : PERMISSION GRANTED TO CONDUCT RESEARCH

Dear Sir

It is our pleasure to inform you that the District Office grants you permission to conduct research at **Hlanganani, Soshanguve Secondary and Makgetse High schools** within the District on the topic: **“Teacher initiatives on digital literacy in English Curriculum Pedagogy”**.

You may conduct the research from **06 February to 29 September 2017** and only **after contact time** to protect teaching and learning activities. The principal must be consulted about an appropriate time to conduct the research.

You are personally responsible for providing and utilizing your own research resources. Participants' names must not appear in the research report and all appropriate ethical measures must be implemented to safeguard them.

Tshwane North District expects you to submit, upon completion, a summary of your research findings as stipulated in **Clause No. 11 of the GDE Research Approval Letter**.

The District appreciates your contribution towards the enhancement of education in the province and anticipates your success with your research project.

Regards


MS SL MOLOBI
DISTRICT DIRECTOR: TSHWANE NORTH

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