

**TEACHING COMPUTER APPLICATIONS TECHNOLOGY IN AN UNDER-
RESOURCED SCHOOL: A TEACHER'S SELF-STUDY**

BY

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STATEMENT BY SUPERVISOR

This thesis is submitted with/without my approval.

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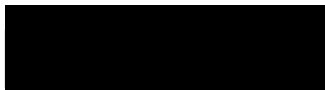
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ACRONYMS

ATP	Annual Teaching Plan
B.ED.	Bachelor of Education
C2005	Curriculum 2005
CAT	Computer Applications Technology
CAPS	Curriculum and Assessment Policy Statement
CD	Compact disk
DBE	Department of Basic Education
DBE	Department of Basic education
DP	Deputy Principal
FET	Further Education and Training
GET	General Education and Training
HDE	Higher Diploma in Education
HP	Higher Primary
HoD	Head of Department
ICT	Information and Communication Technology
IT	Information Technology
LP	Lower Primary
MED	Master's in Education
NCS	National Curriculum Statement
OBE	Outcomes - based Education
PAT	Practical Assessment Task
PL	Post level
RDP	Reconstruction and Development Project
SGB	School Governing Body
SMT	School Management Team
SSA	Sub Standard A
SSB	Sub Standard B

ABSTRACT

My personal history self-study research focus was on teaching Computer Applications Technology in an under-resourced school. This study aimed to ascertain what I can learn from my personal history, to improve my CAT teaching practice in an under-resourced school by exploring effective teaching strategies. I was frustrated by my CAT learners, who were performing poorly in CAT due to the ineffective implementation of the CAT curriculum, thus producing the poor quality of CAT results. Adopting a Sociocultural perspective on teaching and learning assisted me in understanding that learning is constructed through social and cultural interaction and learners learn more efficiently by using tools to solve problems by using resources available to them in their environment. My first research question was: *What can I learn from my personal history about teaching Computer Applications Technology in an under-resourced school?* This question allowed me to revisit and re-examine my learning and teaching experience from when I first fell in love with technology at home and through doing practical subjects in high school and college studying computer studies. And as a novice teacher, I have a better understanding of strategies I can employ to improve my teaching of CAT in an under-resourced school. Throughout this self-study research journey, I worked closely with my critical friend, who was also a master's student. I used various data sources to generate data for this self-study, such as my reflective journal, photographs, memory drawings, and a collage. My second research question: *How can I improve my teaching of Computer Applications Technology in an under-resourced school?* To respond to this question, I worked with my college friend, who is also my colleague, deputy principal, and a former CAT learner, as my participants. The different discussions and activities we had for this study helped me understand how they perceived and received my CAT teaching in an under-resourced school. I used multiple self-study practices that helped me generate data for my research. I used artefact retrievals such as photographs, a stiffy disk, and collage making. From my personal history self-study and contribution from my participants, I identified four significant learnings regarding teaching and learning of CAT in an under-resourced school: (i) *CAT teacher as a resource manager*, (ii) *Time allocation according to policy document versus disadvantaged school* and (iii) *Collaborative learning as a response to limited computer resources*. As a CAT teacher, I learned that I serve as a human resource that can connect other resources through interacting and collaborating with others to help me facilitate valuable teaching support to learners.

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CHAPTER ONE

EMBARKING ON A NEW JOURNEY OF DISCOVERY AS A CAT TEACHER

Introduction

The transformation in the education system brought about many changes, one of them being the introduction of computer technology subjects in schools, to bridge the digital divide and to improve the lives of South African citizens. Rogan and Grayson (2003) stated that change is a learning curve that involves enthusiasm to demonstrate new beliefs and to be exposed to insecurities.

In keeping with this theme of change, I decided to further my studies and embark on a journey of self-discovery using self-study research methodology. This self-study helped me to look deeply at my own teaching practice and revisit my learning experiences as a teacher of the subject Computer Applications Technology (CAT) in an under-resourced school in the province of KwaZulu-Natal in South Africa. In South Africa, an under-resourced school is one which does not have proper infrastructure, money and teaching resources and often lacks knowledge and skills to promote physical, emotional and social health (Zide, 2013). As a CAT teacher in an under-resourced school, I wanted to know whether the teaching strategies I was adopting when teaching my CAT learners, was aligned with the CAT curriculum as prescribed by the Department of Basic Education (DBE) in South Africa. In order to establish this, I needed to reflect on my practice so that I could get a better understanding of my teaching strategies. Khoza (2018) agrees that teachers reflect on their teaching experiences because “when teachers reflect, they interrogate their experiences and correct some mistakes that affect their teaching” (p. 2). I wanted to become a better teacher who will make a difference in the CAT learners’ performance. Hence, I decided to conduct a personal history self-study to help me look into my past learning experiences and my CAT teaching practice to help me improve my teaching practice in an under-resourced school. Furthermore, I needed to explore what I can learn from my personal experiences about the teaching of CAT in an under-resourced school.

In this first chapter, I present the focus and purpose of my self-study research. I give a detailed account of the background of my study. I also discuss the reasons for conducting this research and

what I want to achieve as a CAT teacher, teaching in an under-resourced school. Furthermore, I deliberate on the key concepts and the theoretical perspective that helped to frame this study. Thereafter, I highlight the methodological approach used in this research study. This is followed by an explanation of the research questions that guided my research. Finally, I provide an overview of the entire research study.

Focus and purpose of the study

The focus of this personal history self-study was on teaching CAT in an under-resourced school. My intention was to explore the different teaching strategies which I anticipated could help me in improving my practice of teaching Computer Applications Technology (CAT) in an under-resourced school. As a teacher of CAT, I have come to realise that most teachers cannot teach according to the prescribed curriculum because the schools they teach at, lack the necessary resources and not because they are lacking in subject content knowledge. I also came to know that lack of resources leads to poor learner performance in the subject CAT as claimed by Khoza (2018) who said that “learning activities are produced by resources in order to be used by learners.” This lack of resources has resulted in learners resenting the subject because they felt it was difficult because they could not implement practically what they had learned theoretically. Similarly, in my own teaching, failure to teach some topics due to a lack of teaching resources militated against my teaching of CAT effectively. At the school where I teach, an analysis of examination results, indicated that CAT was one of the poorest performing subjects. Additionally, the learners’ poor performance led to dropout of learners and also had a negative impact on me as a CAT teacher. I lost my confidence and enthusiasm for teaching CAT and I developed an inferiority complex. This has led me to agree with Khoza (2018) that resources play a crucial role in informing the teaching and learning process.

Although I initially felt defeated by the situation described above, but in time, it created a burning desire within me to not let this situation prevail but to remedy it by developing and producing learners who will be computer competent and thereby be able to transition smoothly into the world of work and be able to compete in the global market. I wanted to do this by providing them with skills they can acquire from being taught CAT. This was also spurred on by my interest and love

for teaching computer technology especially to learners from under-resourced schools in South Africa.

Coupled with this, I have also established that there is a huge gap between western and eastern countries as compared to African countries in terms of teaching computer technology. With the rapid advancements in technology requiring perpetual upgrading of digital skills, African countries are still lagging behind as compared to other countries. Kiptalam and Rodrigues (2010) concur that there is a huge challenge faced by African countries concerning exposure to technologies because the computer-learner ratio is too high due to a lack of resources. Consequently, as a CAT teacher I felt concerned about the number of computers in my computer laboratory as three learners were sharing one computer. However, according to the prescribed curriculum (DBE, 2006), the school should be able to provide one computer per learner per period and also make provision for sufficient computers to enable the practical examination. Hence, my interest was piqued in exploring ways to develop my enactment of the CAT curriculum so as to benefit CAT learners and also enhance their interest in the subject. My aspiration was to help learners improve their CAT performance by improving my own teaching practice. I wanted to make sure that teaching CAT becomes interesting and enhances learning.

Rationale

South Africa as a still-developing country with its critical history and faces many serious socio-political and economic difficulties and struggles. This is exacerbated by the poor infrastructure for information and communication technologies (ICT) which is expanding the gap between South Africa and the developed countries (DBE, 2004). As a result, South African education is in a predicament of having many under-resourced schools in townships¹ and in rural areas. Studies such as Mathevula and Uwizeyimana (2014) reveal that South Africa has a challenge in teaching computer technology subjects such as CAT and Information Technology (IT) due to a lack of computer resources.

¹In **South Africa**, the terms **township** and location usually refer to the “often underdeveloped racially segregated urban areas that, from the late 19th century until the end of apartheid, were reserved for non-whites, namely Indians, **Africans** and Coloureds. **Townships** were usually built on the periphery of towns and cities” (Jürgens et al. (2013, p. 256)

Rammala's (2009) study revealed that a lack of learning facilities such as libraries and learning resources for example computers is a huge contributing factor to the poor performance of CAT learners in most schools. The researcher also highlighted that the lack of educational resources at learners' home has an influence on learners' poor performance because television, computers and internet play a pivotal role in academic support. As a result, learners who are not exposed to these technologies would also be negatively affected. Similarly, in my teaching practice, there are insufficient teaching and learning materials to help learners perform better (Rammala, 2009). Compounding this situation, my CAT learners come from disadvantaged socio-economic backgrounds where there are no learning technologies such as computers, television and internet to help them learn and do projects. Consequently, the CAT curriculum implementation is limited by the availability of teaching resources, which therefore hinders the teaching process inevitably. Berger (2003) affirms this by claiming that well-resourced schools perform better than under-resourced schools as far as curriculum implementation is concerned.

As a CAT teacher I have always struggled with curriculum coverage so much so, that I had to chop and change topics to teach due to unavailability of sufficient computers. For instance, my CAT learners were never exposed to learning how to send an e mail or view a web browser such as google to search for information on the internet. As for basic end-user computing such as creating a word document or creating a spread sheet, I had to get learners to work in pairs instead of doing individual work which resulted in poor learner performance in the subject CAT. This is why I felt that there was a need to explore strategies to help me address the issue of teaching CAT with limited teaching and learning resources in an under-resourced school.

Background information

I am a qualified Computer Applications Technology teacher and I teach from grade 10 to 12. I have been teaching CAT in the same school for the past 17 years. As a novice teacher trained to teach in a well-resourced environment, this was my first initiation to the problem of poor teaching resources and this affected my life as a teacher. Consequently, my interest in conducting this personal history self-study emanates from the challenges I experience as a CAT teacher, teaching in an under-resourced school. The school has limited computers and conducting practical computer activities has been a challenge in an overcrowded computer laboratory with insufficient computers.

Many learners have to share computers and this has resulted in the ineffective implementation of the CAT curriculum thus producing poor quality CAT results. As indicated before the Curriculum and Assessment Policy Statements (CAPS) stipulates one computer per learner for effective teaching and learning of the CAT curriculum (DBE, 2006). However, in my CAT laboratory, there are three learners sharing one computer. As a result, I decided to conduct this study to explore new innovative teaching strategies to effectively implement the prescribed CAT curriculum with limited resources.

The focus of this self-study is therefore my personal and professional growth through improving my classroom teaching practice in an under-resourced school. Tidwell, Heston and Fitzgerald (2009, p. 119) affirms that “self-study facilitates professional growth in a way that not only results in changing oneself but also serves as an impetus for tackling the wider problems that contextualise our individual lives.” Despite being an experienced qualified teacher, there still is a need for continuous upgrading in terms of computer technology knowledge and skills, in order to keep abreast with the developments in technology (Mishra & Koehler, 2006). This is the reason I conducted a personal history self-study to find out how my educational experiences can contribute to transforming my teaching practice.

I currently hold a Head of Department (HOD) position at my school in the Technology department. This position entitles me to facilitate and conduct workshops and assist junior teachers with teaching methods for under-resourced schools and also help change some of negative attitudes about teaching and learning computer technology in a school trapped in the past history of South Africa.

According to the CAPS policy document (DBE, 2002), HODs are also positioned as curriculum leaders. So, it is my responsibility as HOD to ensure that active teaching and learning takes place while giving advice to teachers as well as contributing to curriculum development at school. However, for me to be able to contribute meaningfully to the development of the curriculum, I needed to explore creative and innovative strategies so as to adequately meet both learners’ and teachers’ needs.

The CAPS policy document was introduced to South African education in 2006. The inclusion of the CAT curriculum took place after I received my teacher training. So, to me it was a new phenomenon and the retraining that I so desperately needed never happened. I was introduced to the CAPS curriculum at workshops which did not adequately prepare me for the required teaching strategies for CAT. This was further compounded by a lack of computer resources and a computer technology background amongst learners. The Computer Applications Technology curriculum was introduced to prepare learners with skills to allow them to participate in a global job market. CAT is the study of incorporated elements of hardware and software and should expose learners to the proficient use of hardware and software; presentation and communication technology and human computer interaction (DBE, 2011). According to the DBE (2011), CAT is meant to develop learners to become computer literate and to also become proficient applications (software) end-users. According to the CAPS policy document, the aims of teaching CAT are:

To allow learners to use hardware and software efficiently to provide solutions to problems of the digital age.

To learn to collect, analyse and edit data as well as manipulate, process, present and communicate information to the global community (DBE, 2011)

As the technology world develops came - in the Fourth Industrial Revolution (4IR) that brought about new technologies such as Robotics, Artificial Intelligence, Internet of things, smart classrooms and etc. The emerging of 4IR in the education sphere demands transformation in the computer classroom as well to allow flexible and virtual teaching and learning (Ellayan, 2019). Kim (2017) concurs that the curriculum should be preparing learners for the emerging 4IR jobs that never existed. Therefore in order for me to be able to successfully develop learners who will be able to implement, manage and work with the 4IR technologies in the work space. This implies that as a CAT teacher I need to have new technology resources to allow sharing of resources such as cloud computing and allowing learners to bring their devices to connect to the school internet. Computer Applications Technology is a transformational, practically orientated subject, which involves the teaching of computer components for different computing devices and how to use them practically (DBE, 2011). CAT also teaches learners to use different software applications to overcome problems, for instance, using a spreadsheet to perform calculations and display data in a graph for visual illustration. CAT as a school subject also covers topics for example internet technologies, E-communication and webpage designing. CAT stems from and is a subcategory of

the wider knowledge field of Information and Communication Technologies (ICT's) (DBE, 2004). ICT's are the combination of hardware, software, networks and internet and also serves as a means of communication, collaboration and engagement that allows the processing, analysing, managing of information and exchange of data and knowledge (DBE, 2004).

The low performance in the National Senior Certificate examination in CAT in the years 2010 - 2018 were attributed to the lack of resources at my school. Table 1.1 below shows the analysis of Grade 12 CAT results from 2015 to 2018. The table provides a visual representation of the number of learners who wrote the examination, the number of learners who passed, and the levels achieved from level 1 (0 - 29%), level 2 (30 - 39%), level 3 (40 – 49%), level 4 (50- 59%), level 6 (60- 69%) to level 7 (80- 100%). The table illustrates the decline in the number of CAT learners taking the subject and the low performance of learners in the subject CAT. Most of my CAT learners are achieving between levels 2 and 3.

Table 1 Grade 12 CAT analysis

COMPUTER APPLICATIONS TECHNOLOGY GRADE 12 ANALYSIS										
YEAR	NUMBER WROTE	NUMBER PASSED	PASS %	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	LEVEL 7
2015	80	55	68%	25	18	12	12	7	5	1
2016	66	49	74%	20	10	17	10	3	4	2
2017	42	40	95%	8	12	10	6	3	2	1
2018	30	30	100%	0	15	8	3	2	1	1

Table 1 Analysis of Grade 12 CAT results

The poor CAT performance of grade 12 learners at my school has been my concern over the years since I taught the subject. I believe that the decline in the number of learners choosing CAT as one of their subjects was as a result of insufficient resources. As Rammala (2009) highlighted, the inadequacy of resources is one of the factors that influences poor performance of learners at school. Similarly, the problem is that most of my CAT learners do not perform at an acceptable level as depicted in Table 1.1. The bulk of learners are achieving at lower levels and the number of learners performing at level 7 are very minimal.

Methodological approach

The research methodology I chose for part of this study was personal history self-study as I wanted to look at my past and present experiences in order to transform my CAT teaching practice (Samaras & Roberts, 2011). I decided to undertake this self-study research because I wanted to develop my teaching strategies so that I could assist my CAT learners improve their learning performance (Samaras, 2011). Masinga (2013) points out that self-study researchers like myself aim at gaining a better understanding of their practice to bring about positive self-development. Similarly, with this personal history self-study research, my aim was to engage in deep self-introspection. I took my cue from Masinga (2007, p. 9) who defines self-study as a “way of looking at myself and my actions as an educator in an introspective manner.” I consider my self-study research to be a foundation for growth that promotes change in how I teach CAT so that I can become a proficient CAT teacher. Studying myself as a teacher should give me a meaningful sense of the teaching approaches I use that should afford me an opportunity to learn and make changes where necessary (Masinga, 2012). Additionally, Samaras, Hicks and Berger (2004) points out that personal history self-study develops “self-knowing towards personal and professional growth” (p. 10). Self-study methodology empowered me with the means to understand who I am as an individual and also as a CAT teacher, teaching with the intention of personal and professional growth. I used personal history self-study as a vehicle to track both the personal and educational experiences that could have influenced my CAT teaching.

Pithouse-Morgan, Mitchell and Weber (2009, p. 45) points out that “self-study involves using methods that facilitate a stepping back, a reading of our situated selves as if it were a text to be critically interrogated and interpreted within the broader social, political, and historical contexts that shape our thoughts and actions and constitute our world.” In conducting my research, I created

collages and used memory drawings to facilitate how I explored my understanding and past experiences. My focus was on personal and professional growth by improving my CAT teaching practice and to provide a deeper understanding of the teaching in an under-resourced school. I gave in-depth details about my methodological approach in Chapter Two.

Research questions

There are two research questions that underpin this study:

The first research question:

What can I learn from my personal history about teaching Computer Applications Technology in an under-resourced school?

In responding to this question, I reflected on my past learning experiences from my early childhood to a professional level. I wanted to learn about how I learned and taught Computer Applications Technology through revisiting and re-examining my past experiences. In order to respond to this question, I chose significant artefacts to assist me in the creation of my personal history narrative. Keeping a reflective journal and artefacts such as photographs and memory drawings also allowed me to recall significant incidents that shaped part of my personal history. I recalled how I learned technology at home, school, at college as a student and as a teacher. Embarking on a reflective process, I developed a better understanding that the learning of technology was not only formal at school when taught by teachers but also through using technology applications at home and this best describes the teacher I became.

The second research question:

How can I improve my practice of teaching Computer Applications Technology in an under-resourced school?

In order to respond to this question, I engaged with my high school and college friends, colleagues and a former CAT learner as my participants. In addition, I worked with a critical friend who was also studying for a Master's degree. I collaborated with the participants to delve into different personal and educational experiences of my learning and teaching through engaging in discussions. I used artefacts and photographs which portrayed memories of my learning and teaching experiences. I employed these self-study activities because Weber (2014) attests that visual images

allow us to re-visit and re-exam our practice from a new perspective presented by the model itself to enhance the ability to interrogate and interpret my experiences. My focus was therefore on reflecting and discussing significant learning and teaching memories using artefacts on how I learned and taught computer technology.

Collaborating with participants provided different constructive pieces of advice and thoughtful ideas that were created through collage making to assist me on how to improve my CAT teaching practice.

Considering my personal learning from a sociocultural theoretical perspective

Socio-cultural theory was used in this study as a lens to view my personal history as I looked at my educational experiences including my future teaching practice. The sociocultural perspective encompasses a relationship between a teacher and learning based on social interaction. Lee (2014) concurs that “the sociocultural dimension is an important part of teaching and learning because education systems [and] classroom teaching and learning are neither culture nor context free” (p. 1039). According to LaBoskey (2004), self-study research is underpinned by a knowing that “learning is processed through previous experiences so personal history and cultural context must be considered” (p. 819). Hence, I adopted the sociocultural theory to help me view my past, where I observe how I learned from my primary socialisation and how I interacted with my cultural upbringing. The sociocultural perspective stipulates that we learn from home where also moral fibres, values and beliefs are instilled in us (Lee, 2014).

Lee (2014) maintains that teachers should build on the knowledge that learners use every day experiences when they are engaged in activities to learn computer concepts. I believed that the socio-cultural theory was appropriate for this study with the assistance of its basic concepts of teaching and learning especially from knowledge gained through social interaction and the cultural background. The use of tools play a vital role in teaching and learning of CAT in an under-resourced school as teachers need to be a source of information to provide learners with knowledge. Thus, it is also of importance for teachers to be informed about the sociocultural considerations. This may be achieved through the use of cultural and daily occurrences that are well-known to both teachers and learners.

Through my journey, socio-cultural factors facilitated my learning as I drew from what I knew to relate to the curriculum (Turuk, 2008). Such learnings that emanated from culture included beliefs, morals and language. Quinton (2013) explains that parents, peers and the community play a vital role in providing learners with the knowledge they bring to class. As Dimitriadis and Kamberelis (2006) express, regarding the sociocultural theory, “parents, caregivers, peers, and the culture at large are responsible for developing higher-order functions” (p. 192). Teaching a child does not happen in a vacuum, according to Cottone (2001). Learning is a shared rather than an individual responsibility of family members, community and the school. This insinuates that learners’ reasoning is shaped by their involvement in the social community and that these experiences should be developed to enhance the learning processes.

The sociocultural classroom focuses on learning where collaboration is dominant. Learners create meaning from their experiences by working together and sharing ideas to solve problems (Kelly, 2006). This implies that in a classroom such as my CAT laboratory where the computer-learner ratio is 3 learners per computer, learners are compelled to work collaboratively. Working as a team means engaging with each other to construct knowledge and being able to learn from each other. Kelly (2006) points out that “knowing-in-practice is a process resulting from the collaborative actions of teachers and students together in the context of their own” (p. 510). Even as a teacher, collaborating with other teachers is crucial as it promotes knowledge construction and insight that contribute towards teaching and learning.

The sociocultural theory is further defined as the interactive process where learning is mediated by teachers using a range of tools. Adopting the sociocultural perspective as a lens to view this study, it may be maintained that learners acquire their understanding through using resources as tools that are available to them in their environment (Conkbayir & Pascal, 2016). These tools include the use of language, conceptual frameworks and artefacts such as books, computers, email and online forums which are continually developing and changing. Similarly, in my CAT class, I use computers as a tool to teach Computer Applications Technology in order to implement the intended curriculum and enable learners to participate in learning activities where learners

construct knowledge from the social background. It is therefore inevitable that CAT learners' understanding of computer concepts and how their capability to solve computer problems are influenced, by the resources that they are taught to use in the CAT class (Conkbayir & Pascal 2016).

Teaching in under-resourced schools poses a problem in the enactment of the CAT curriculum. In this study, I identify two key themes underpinning this study: (a) the teaching and learning of Computer Applications Technology (b) the concept of under-resourced school. To further deliberate on these two key themes, I present the key concepts with relevant literature in order to bring in meaningful insight about the two identified themes.

Teaching CAT in an under-resourced school

I want to state that this study does not have an independent literature review chapter but literature is woven in the text across all chapters. This process is following the trend of similar self-study research projects. In the following paragraphs, a short literature review of the topic is provided. The purpose of the short literature review is to highlight the two key issues that my study is grounded in, namely:

- The challenges of teaching CAT in under-resourced high schools
- Suitable pedagogical approaches in teaching CAT in an under-resourced computer laboratory

According to a study conducted in high schools in KwaZulu Natal (KZN) rural areas by Fambaza (2012) on the experiences of teaching CAT in the Further Education and Training Band (FET)² (grades 10- 12), the challenges faced by most teachers teaching CAT were a shortage of computers at schools and that most of the time, the computers were broken and not functioning, forcing learners to work in pairs, which makes teaching and learning very challenging. Also, Oberg and Gibson (1999), found similar challenges in their study which include insufficient funds to purchase and maintain or upgrade hardware and/or software and insufficient computers as well as poor internet connectivity.

² South Africa's education systems has three different bands. The first being the General Education and Training (GET) phase (Grade 0 (or Grade R) to Grade 9, second band is the Further Education and Training (FET) (Grade 10 to Grade 12), while the third and last band is the HET band, Higher Education and Training (university education throughout South Africa and is the highest recognised qualification (Education in South Africa, 2015)

Another study conducted by Rijuan (2009) on problems encountered with the teaching of Computer Applications Technology and Information Technology (IT) at senior secondary school level, revealed that most of the challenges encountered by CAT educators were a lack of appropriate pedagogical training for teachers, the socio-economic status of learners resulting in not affording computers at home to practice on and the inability of schools to provide financial support to purchase the necessary resources for schools such as computers and other learning materials for CAT and IT. Additionally, Rijuan (2009) found CAT teachers spend a lot of time doing the school administrative work and end up having insufficient time for teaching CAT. Due to the lack of financial support, CAT teachers are forced to become a jack of all trades as they are teachers and technicians as they are sometimes expected to fix broken computers as well as design websites for the school.

The importance of applying the appropriate pedagogical approaches is evident in the qualitative study conducted by Venter (2016) on challenges of authentic Computer Applications Technology education in practice. Venter's (2016) study revealed that the CAT curriculum is designed to use a technician approach as a vehicle to drive the teaching and learning process, where teachers are required to teach with learning materials such as CDs with the Annual Teaching Plan (ATP) consisting of content and activities to be taught. In other words, the main focus of the curriculum relies on curriculum delivery with material which has been designed to be CAT teacher-proof. The results of Venter's (2016) study highlighted that teachers adhere to a technician pedagogical approach in accordance with the intended curriculum. In this way, the aim of enabling learners with skills to solve real word problems is inadequately met. It was also found that the implementation of the authentic CAT curriculum by teachers could promote solving of real-life challenges.

As Moila (2006) attests, teachers should be in a position to classify the goals and purpose of their lessons and be able to decide on the appropriate computer programmes to use. She further affirms that it could eradicate the misuse of technology in the classroom. The Department of Basic Education (2003) specifies that efficient use of computers can develop creativity, problem solving, critical thinking skills and a sense of reasoning.

Computer Applications Technology Teaching and Learning

Computer Application Technology was introduced in 2006 through Outcomes Based Education (OBE) to be taught at the FET level (Grades 10 to 12). According to the Curriculum and Assessment Policy Statements (CAPS), CAT is the effective use of information and communications technologies in an end-user computer applications environment in different sectors of society (DBE, 2011). According to the CAPS (DBE, 2011), Computer Application Technology teaching should:

- empower learners with knowledge, skills, values and attitudes to create, design and communicate information using multiple platforms
- enable learners to collect, analyse and edit data
- manipulate, process, present and communicate information to different sectors of society
- ensure that learners are well-equipped with in-demand skills in order to survive in the global information society.

However, it does not stipulate how to promote all of the above-mentioned skills in under-resourced schools. According to my understanding, to be able to teach learners to use computers and computer applications or equip them with skills they need to survive in the real world, the school needs to have sufficient computers for all CAT learners. Furthermore, being able to use computers in this digital age is imperative because we live in a technology-reliant world (Kurt, 2019).

The efficient teaching and learning of CAT is considered to be crucial in a sense that every aspect of our lives now requires knowledge of computers, be it at home sending emails or creating a spreadsheet to draw a budget in the business world as a manager. As a CAT teacher, I believe that I have a responsibility of developing my computer pedagogical knowledge in order to effectively facilitate the teaching and learning of CAT. Khoza (2018) describes pedagogical knowledge as a package comprised of different concepts guided by both the objective and subjective minds such as goals, assessment, time, environment, activities, teacher role, and community and curriculum vision.

Reflecting on my own CAT teaching practice, I realised that it was important for me to align my CAT teaching practice with curriculum concepts as a frame or structure that can support my pedagogical approach. Venter (2016) points out that the CAT curriculum is centred on the technician approach hence it stipulates the use of specific teacher/learner approaches. For instance, one of the CAT curriculum goals is to develop learners who are computer literate and learners who will be competent employees. This implies that the teacher through this goal is directed to apply practical approaches that endorse Paulo Friere's (1994) pragmatic approach of teaching which is learner centred. The pragmatic approach pays attention to curriculum implementation that is compatible with teaching approach which involves reflecting on one's teaching experience through self-questioning and exploring your own practice. This teaching approach provides an understanding as the curriculum specifies on the aims, the knowledge as well as skills that could be beneficial to its consumers. Similarly the CAT curriculum aims stipulate that at the end, learners would have mastered a web page designing skill which they will be able to use in the labour market in order to become competent employees. In order to become a successful teacher, it is crucial to identify and understand appropriate goals from the subject content (Khoza, 2015). Hence, I strive to become successful in my CAT teaching practice, as my role as a CAT teacher is to teach the learners and also provide clear guidance according to the content drawn from the mission of the CAPS policy document (DBE, 2011) which is aimed at teaching the necessary computer skills and acting as a support to learners (Quinton, 2013).

Acquiring the content knowledge of technology and the suitable policy documents for teaching and learning of CAT, is a major contributor to implementing the curriculum effectively. However, I feel that I have not developed my knowledge of CAT sufficiently to be able to achieve the CAT educational aims. I realised the importance of acquiring the technological pedagogical content knowledge (TPCK) which involves knowing the technical parts of technology and understanding the pros and cons in identifying the pedagogical approach as well the content to enhance the teaching and learning of CAT (Koehler & Mishra, 2008).

I feel it is imperative that CAT teachers are required to have a knowledge of technology. Lawless and Pellegrino (2007) concur that "technological literacy has fast become one of the basic skills of teaching" (p. 580). For CAT teachers to be able to train their learners to be technologically skilled, they need to gain at least the minimum skills of using technology.

Enactment of the CAPS curriculum in an under-resourced school

According to Khoza (2018), curriculum is described “as a plan for teaching and learning” (p. 2) and he further defines the enacted curriculum as the implementation of the intended curriculum. The Curriculum and Assessment Policy Statement (CAPS) describes what should be taught in class and also outlines teaching resources required without explaining the pedagogy (DBE, 2011). The CAPS policy came to reality in 2012 and it provided clear directions and guidelines in terms of content, class activities and assessment. It also guides teachers on how we should teach each subject in the classroom. The Department of Basic Education (DBE) (2011) views CAPS as a means of transforming the implementation of the intended curriculum and not pedagogy while the DBE (2011, p. 7) states that “CAPS is being used as a starting point for bridging the gaps, reducing redundancy and providing guidance and directions where necessary for example learning areas has been change to subjects, learning outcomes and assessment standards are no longer there but restructured into general aims of the South African curriculum.” Resources are one of the curriculum aspects which play a vital role in the implementation of the enacted curriculum.

Resources refer to the materials and human resources that are used in the implementation of a curriculum. Khoza (2020) describe resources as “objects or persons communicating the teaching and learning” (p. 5). According to Khoza (2020), CAT resources are classified according to hardware which consists of tools used for teaching, software which includes materials used in the teaching and learning process and finally the ideological ware which is regarded as instructions given to learners on how to use hardware or software. For instance, in the CAT curriculum, the computer devices such desktop and laptop computers and application software such as word processing and spreadsheets are programs used to facilitate the teaching and learning of CAT. A standard-based ICT infrastructure is needed for the successful teaching of the Computer Applications Technology curriculum (Tattersall, Watts & Vernon, 2007). When implementing the CAT curriculum, the researcher takes cognisance of the resources available and the number of learners per computer.

The CAT enacted curriculum provided to the teachers acts as a guideline and a means of support. It is further extended to the teaching and learning resources which are recommended and encouraged by the enacted curriculum (DBE, 2003). The introduction of the curriculum was based

on the idea that schools were prepared for the implementation of the enacted curriculum. However, schools are still not able to adequately meet the requirements of the subject. According to Ajiboye (2007) and Adeyinka et al. (2012), the lack of technology resources such as computers to drive the subject efficiently, is one of the contributing factors to learner failure of CAT. In a CAT classroom, the lack of access to computers by most learners, makes it difficult to use computers to enhance the teaching and learning process. Belland (2009) maintains that barriers to teaching computers include shortage of resources such as knowledge, skills as well as the availability of computers.

In South Africa, the issue of under-resourcing that is, the lack of teaching and learning resources in the classroom, poses a huge challenge in the teaching and learning of CAT. The issue of under-resourcing in schools offering CAT as one of the transformational subjects contradicts what the curriculum policy stipulates of one computer per learner (DBE, 2011). The under-resourced schools do not adhere to the policy as expected by the DBE. Thus, it is difficult to conduct a practical lesson in a CAT classroom. As a result, it becomes near impossible for the effective implementation of the curriculum. Ajiboye and Adeyinka (2007) point out that, regardless of the state of resources, teachers are required to effectively implement the resource-driven curriculum in the insufficiently resourced classroom. Van Eeden (2018), attest that effective teaching demands the use of necessary resources or teaching materials to improve teaching and learning.

The shortage of teaching resources hinders effective teaching as well as the progress of curriculum implementation. The school context is a huge contributing factor to poor performance when there is inadequacy of teaching and learning resources. As the school does not have proper computer laboratories as well as an internet connection, this means that learners learn CAT with many gaps in practical work (Norton et al., 2000). This means some of the learners complete grade 12 without exploring and browsing the internet as the curriculum expects them to. As a result, CAT learners in an under-resourced school are not performing well and are lagging behind with the curriculum. However, the enacted curriculum expects the learners to be proficient in using all types of software that is operating and application software including web browsers. Therefore, the inadequacy of computer resources does put an unbearable strain on my teaching practice.

Overview of the thesis

In this chapter, I provided an introduction to this study and in-depth details of the background for my personal history self-study. I explained the purpose and the rationale of my study that brought about the dire need of taking a journey into my practice to explore innovative strategies in an attempt to improve my CAT classroom teaching practice in an under-resourced school. I discussed the introduction of CAT as a transformative subject and the challenges of teaching CAT in an under-resourced school. I thereafter discussed the two research questions underpinning this study and then presented the theoretical perspective I adopted as a lens to view my study. Furthermore, I gave a short account of the methodological approach I chose to use for this study.

In Chapter Two, I first discussed the personal history self-study as the methodological approach that I employed. I then embarked on a discussion of the research methodology and outlined the intention of the personal history narrative. I also described the research settings and explained the role of myself as a principal participant together with the involvement of other participants and the contributions of a critical friend in my study. In addition, I presented the table depicting my data generation process and thereafter highlighted the data analytical strategies. Furthermore, I discussed how I established trustworthiness for my study and the challenges I encountered during my research process. Finally, I provided an explanation of the ethical issues I encountered while conducting the research.

In Chapter Three, I began my personal history journey into my past learning and teaching experiences in an under-resourced schools to answer my first research question: *What can I learn from my personal history*. I engaged in a process of data generation by using memory drawings and photographs to help me in collage making. I also used metaphors to retrieve significant memories of my learning and teaching experiences. I shared the discussions with my friends, colleagues, former CAT learner, my critical friend and my supervisor which improved my learning. In this chapter, I traced back my love of technology as well as the role my teachers played in my learning and in shaping my teaching practice. I narrated the significant learning experiences from socialisation at home, primary education and tertiary education and how these experiences influenced me as a person and as a teacher.

In Chapter Four, I extracted data from my personal history narrative as well as data generated from working with participants and critical friends to address my second research question: *How can I improve my CAT classroom teaching practice in an under-resourced school?* I reflected on my educational experiences by working with participants and a critical friend. I thereafter processed data collage making to reveal educational experiences shared with participants and the themes that emerged. Using data generated from my participants, I managed to produce evidence that depicted how my childhood learning influenced me, as a person and professionally. Through learnings that emanated from data generation, I provided new meaning to my teaching practice and devised teaching strategies that acted as building blocks for the transformation of my teaching practice and as a HOD.

Chapter Five is the last chapter where I presented the learnings that emanated from my personal history and participants' contributions. I used collage making and to summarise and identify new concepts from the data generated. From analysing my personal history and participants' input, I created a collage to consolidate the learnings that emerged. These three learnings are:

- i) *Time allocation according to policy document versus disadvantages school*
- ii) *CAT teacher as a resource manager*
- ii) *Collaborative learning as a response to limited resources*

I further gave an account on the reflective review of my personal history self-study, expressing recommendations on effective strategies to improve my CAT teaching practice in an under-resourced school. Finally, I described what I will like to investigate in my future research endeavours.

Conclusion

To conclude this chapter, Chapter One, I provide an overview of the chapter. In the introduction, I provided the reasons that triggered my interest in teaching CAT effectively in an under-resourced school. I discussed the focus of my study, which is the focal point of my own learning as a CAT teacher in relation to the teaching of Computer Applications Technology. I thereafter explained the purpose of the study, which was to improve my teaching practice of Computer Applications Technology in an under-resourced school. Furthermore, I described the background information of the need to improve my teaching practice and explained briefly what is stated in the curriculum policy. Thereafter, I gave a brief discussion of the methodological approach, explaining why I believed that a self-study research methodology was suitable for the focus and purpose of my study.

CHAPTER TWO

THE RESEARCH PROCESS

Introduction

The purpose of this study is to improve my CAT teaching practice in an under-resourced school for the betterment of the implementation of the intended curriculum. In the previous chapter (Chapter One), I explained the reasons for embarking on this study. I discussed the focus as well as the purpose of this research and the background to the research study. I also explained the two research questions underpinning this study. Finally, I gave a brief account of the methodological approach and the theoretical framework used in this study.

In this chapter (Chapter Two), I outline the self-study research methodology. This research methodology intends to address the gap in my classroom teaching practice in relation to utilising the available resources in order to stimulate professional growth. I give an in-depth narrative of the research setting and also provide information on my professional background. I give a full description of my research participants. Then, I finally state the challenges I experienced during the research process and the limitations of the study. I also look at how trustworthiness was established for this study and the credibility of the study. Finally, I elaborate on the ethical issues for this study.

Research methodology

In this study, I used personal history self-study as a methodological approach to look at experiences from the past. Samaras (2011) expressed that this approach is effective in questioning ‘who you are as a teacher, your teacher identity, the motivations behind your teacher goals and the constraints you faced and the support received in reaching those goals (p. 95). I examined my upbringing and the CAT teacher that I became in order to reveal how these lived experiences and understandings could have contributed to my teaching practice.

Pithouse and Samaras (2015) highlighted that “in self-study research, professionals seek out innovative and responsive ways of seeing, doing, and becoming.” (p. 1). Hence, I chose self-study as a methodology for this study because my intention was to examine my professional practice and

seek innovative ways to help me become a better CAT teacher. This self-study allowed me as an individual to view myself and reflect on my own personal and professional experience through my lived educational journey. Hence, the focus of this study is on the development of my teaching practice, for my own benefit and others (Samaras, 2011).

LaBoskey (2004) suggests “one of the crucial elements of self-study is that it is “self-initiated” and “self-focused” (LaBoskey 2004, p. 842). In this regard, this study helped me to identify an area that was troubling me within my teaching space and initiated a process of learning with this study. Through the self-study approach, I anticipated that it would afford me an opportunity to explore new improved ways of teaching CAT with limited teaching resources. I strongly believed that to bring about change, it has to start within me because I wished to “be the change you want to see.” Henceforth, my aim was to bring about change in my own teaching practice which would not only benefit me but many other teachers of CAT as well.

Another characteristic of self-study is the fact that it focuses on bringing about transformation as it is “improvement aimed” (LaBoskey, 2004, p. 844). Thus, my personal history self-study has involved my learning and understanding of my educational space especially with my teaching of CAT in an under-resourced school. My intention was on improving how I interacted with learners and my teaching environment and also created a warm learning environment in the classroom. My study also aimed at improving my profession as a CAT teacher, thus I initiated the process of self-transformation in order to enhance my personal and professional growth.

As suggested by Pithouse-Morgan (2011), I also used self-study as a magnifier to help me zoom into my personal and professional experiences. I explored how my personal history affected the kind of teacher I have become and how I delivered the CAT prescribed curriculum. I wanted to establish how my past learning affected my teaching of CAT to improve my future classroom practice (Samaras, 2011). This self-study helped me develop a sense of how to teach CAT and manage teachers in my department as a HOD effectively in an under-resourced school. This approach intended to transform my ability to teach CAT in order to implement the prescribed curriculum effectively. I considered self-study as a relevant approach that I could use to describe myself within the teaching framework. Thus, I expected that self-study would provide me with an

opportunity to look at my own teaching and make new meaning of it in order to make changes where necessary.

My decision to use the personal history self-study methodology was to evaluate my teaching practice with the aim of providing strategies to improve my profession at large (Samaras & Freese, 2009). Self-study is viewed as an essential and effective methodology to better transform one's teaching practice in a broader educational space (Samaras et al., 2007). Reflections and probing questions helped me explore how my personal history affected the kind of a CAT teacher I have become as well as how I dealt with curriculum issues. Furthermore, I also wanted to know what I brought to the CAT classroom teaching as a result of my life experiences that involved histories and culture.

Samaras (2002) suggests that the social-cultural theory has a relationship with personal history self-study. As a result, it has assisted me in reliving and re-examining my lived experiences. The personal history self-study helped me in embarking on a journey which involved my social interaction with the technology that we used at home and in schools. The social interaction and culture made a huge contribution in shaping the teacher and the person I am today, thus I chose to connect self-study and the sociocultural theory. Furthermore, for my data generation in my self-study research, I applied different visual art-based research techniques, such as memory drawings, collage making and artefact retrieval such as photographs. These visual arts-based techniques helped disclose my lived experiences as well as my learning through the personal history research. Samaras (2011) affirmed that employing arts-based techniques in a self-study affords [me] the researcher an opportunity to critically examine my past which might have been difficult to recall and construct meaning. This stimulates self-reflection which leads to transformation of [my] teaching practice. The use of different data collection strategies allowed me as the personal history researcher to evaluate my own self as well as my personal experiences (La Boskey, 2004).

Research Setting

Due to the nature of my self-study research and the personal history enquiry, the location of my study was at my workplace. My workplace, which is the school where I work as a CAT teacher, is a public school in a township, in a place where only blacks reside and there is a lot of unemployment and poverty. As a result, our school has been declared a “no fee” school. According to RSA (2006), “no-fee school means a public ordinary school that might not levy a compulsory school fee” (p. 42). The no-fee school policy was formulated after the government recognised that funding to poor schools was insufficient and there was a dire need to do away with fees in poor schools to alleviate the load on poor parents and learners. This implies that learners who attend my school do not have to pay school fees because their families cannot afford to (DBE, 2006). Therefore, the school is supported by the DBE in terms of resources and finances but the school is faced with challenges of poor infrastructure and insufficient resources. The school is surrounded by informal settlements (shacks) and small Reconstruction and Development Project (RDP) houses. The RDP housing programme was introduced to redress the imbalances of the apartheid legacy by providing decent housing to poor people who were victims of the land segregation policy by the apartheid government. The intention of this programme is to build houses for all people who cannot afford them.

In this study, I engaged participants namely a college friend/colleague, my deputy principal, as well my former CAT learner to contribute to this study. All my participants are from around the Durban area. Durban is one of the major cities in South Africa and is situated in the KwaZulu-Natal province. Two of the participants reside in the same location as my school which made it convenient for us to meet after school. We met at different venues within the school premises. I met with the deputy principal in her office so as to make her feel comfortable in her own space. I met with my college friend/colleague at my office where we usually meet for our subject meetings and I met with my former learner in the computer room because it was a familiar and comfortable space for him.

The initial plan was to meet with all my participants at a restaurant for an introductory meeting, regrettably, this did not come to pass. The participants failed to arrive at the arranged venue due to their busy schedules and it was a bit far from their residences. The participants’ failure to arrive

for our meeting threw me off track and I decided to discuss it with my critical friend who provided a solution to the problem. She suggested that I “*call the participants and make another appointment and also change the venue as it might be a bit far for them.*” This taught me that I needed to be flexible and accommodating as participants have other commitments.

Hence, the use of our school was considered by all three participants to be a convenient venue. The afternoons after school contact time, seemed to the best time for them since there is an afternoon study session at school, so we used the time to meet when teachers were not supervising the study sessions. I also met my former CAT learner at school in the computer laboratory, the venue that he was familiar and comfortable with since he was also the school computer technician and was responsible for repairing the faulty computers.

Research participants

In this study, I am the main research participant as it is a self-study. I looked at my past educational experiences in order to better understand how I might transform my professional practice as a CAT teacher. I interacted with other participants as the nature of self-study is “interactive” (LaBoskey, 2004, p. 847). Hence, in my study, I worked with three different participants to help me generate data by looking at my past learning and teaching experiences to make sense of my present teaching practice. Samaras et al. (2004) emphasise that personal history self-study is collective and that the “self-studier does not travel the road alone” (p. 910). Thus, I decided to travel this journey with my friends, colleagues and my former learner as self-study research seeks to help [me] researchers to explore [my] the researcher’s own [CAT] teaching practice through interaction and collaboration with my participants (LaBoskey, 2004).

As already indicated my personal history self-study research comprised of three participants and myself. My participants comprised of two female teachers who teach at high school level and a former male CAT learner who is now our school technician. My colleagues have been teaching for more than ten years in the same under-resourced school. We have seen each other move from being novice to veteran teachers who share new ideas, good memories and challenges of teaching CAT in an under-resourced school, I wanted these participants to assist me in answering the research question “*How can I improve my CAT classroom teaching practice in an under-resourced school?*” This is in keeping with Pinnegar and Hamilton (2009) who attest that “self-study research

requires collaboration with others in the practice” (p. 100). Table 2.1 highlights the demographics of participants’ I worked with in generating data for this study. Participants’ real names were not used but pseudonyms, in order to protect their identity and maintain confidentiality.

Table 2.1 Participants’ Details

PSEUDONYM	TEACHING EXPERIENCE	POSITION	QUALIFICATION	RELATIONSHIP
Mrs Shange	35 years	Post Level 3	Bachelor of Education Honours	Deputy Principal
Miss Dweba	17 years	Post Level 1	Higher Diploma in Education (HDE)	College mate and CAT Teacher
Vukile	Student	2 nd -year university student	Matric	Former CAT student

Table 2.1 Participants’ Details

Miss Dweba: Colleague

Miss Dweba (pseudonym), is a colleague who happened to be my college mate as we studied at the same college of education and we both majored in Computer Studies. Her teaching experience is almost the same as mine and we teach the same subject CAT from grade 10 to 12 in an under-resourced school. I selected her to be one of my participants because we have experienced the same teaching challenges, as we are teaching learners who come from the same background. The major teaching challenge we both face is teaching CAT with inadequate computers, application software and a lack of internet access. In working with this participant, I was able to recall our trials and tribulations of learning and teaching CAT in an environment with insufficient resources.

Mrs Shange: Deputy Principal

Initially, I had planned to work with my former principal who retired. Unfortunately, the distance was a problem because when he retired, he moved far away from Durban. He was unable to make time for my meetings, as it coincided with his busy schedule. He was my principal for sixteen years and has been in the school for twenty-six years. I initially wanted to work with him because he appointed me as a novice teacher. Nevertheless, I opted to work with the newly appointed Deputy Principal (DP) Mrs Shange (pseudonym). She is the second DP who is responsible for academic matters in the school. Before her appointment, she was my HOD responsible for monitoring my portfolios, lesson plans and assessments. I chose her to help me remember some of the significant moments of my learning and teaching as she was my superior when I started working as a novice teacher and she had seen me develop from being a teacher to being a member of the School Management Team (SMT) leading the Technology department. She also observed my interactions with the teachers under my supervision.

Vukile: Former CAT Learner

My former CAT learner, Vukile (pseudonym), who passed his National Senior Certificate (NSC) (matriculation) examination in 2013 was one of the participants. I taught him from grade 10 to 12 (2011 - 2013). The reason for electing to also work with a former learner was to help me gain an understanding of my journey as we engage in different activities to explore how he experienced my teaching as a CAT learner. I chose him to participate in my study as he was one of my learners who excelled in the subject CAT and he was a dedicated and well-mannered learner. He loved the subject CAT so much so that he used to spend his spare time in the computer laboratory. He passed his National Senior Certificate (NSC) (matriculation) examination with four distinctions, one of which was for CAT. I believed working with him would play a significant role in bringing transformation to my CAT teaching practice. Also, working with other participants, I was able to bring clarity to some issues of my personal and professional experiences. I did not only work with the aforementioned participants but also engaged a critical friend during my study to help me make meaning of my learning and teaching experience for the betterment of my teaching profession.

Critical Friend

I worked closely with my critical friend, who played a vital role in critiquing my work, providing solutions to problems and making recommendations to assist me in making progress. As suggested by Samaras (2009), “a critical friend is a trusted person who asks provocative questions, provides data to be examined through another lens and offers a critique of a person’s work as a friend” (p. 75). I learned to trust my critical friend’s comments and suggestions about my work as she has helped me view my work from different perspectives. According to Samaras and Roberts (2011), “critical friends encourage and solicit respectful questioning and divergent views to obtain alternative perspectives, and they work to help validate the quality and legitimacy of each other’s claims” (p. 43). My critical friend assisted me in rectifying errors that I had not noticed throughout my research journey. She suggested I use different strategies to communicate with my participants. I was able to think of alternative ways to understand my research and to address the challenges I faced. For instance, I had a challenge with finding an image representing a class with a teacher and learners listening to a radio programme. She suggested that rather I “*draw a memory drawing resembling a class with learners sitting in a circle on the floor with the radio in the middle.*” That is how I overcame certain challenges with the help of my critical friend providing alternate ways to do things.

Fikile (pseudonym) is not only my critical friend but also a personal friend and a fellow college mate when we were studying for our teaching diplomas and our Bachelor of Education Honours (B.Ed. Hons) degrees and we are both doing self-study research for our Masters in Education (M.Ed.) degrees. We have walked the walk and talked the talk together. The inclusion of a critical friend in this study played an important role in my self-study research, as she offered essential advice on my work in progress (Samaras, 2011). My critical friend critiqued and encouraged me to work even harder. We also engaged in discussions based on our teaching and learning experiences (Samaras, 2011).

Samaras (2011) emphasises that self-study requires working together for exchanging ideas and constructing new conceptions through deliberations and discussions. The intention of our engagement was to get support and views above my own personal views (Samaras & Freese, 2006). Hence, I chose Fikile to assist me with my research by providing strength and support and

eliminating unnecessary challenges along the way during my research journey. She also contributed in providing moral support during my research process when I got overwhelmed and when things did not go according to plan. Thus, we worked as a team to overcome challenges.

The intention behind the involvement of a critical friend was developing a sense of shared responsibility that functions to lighten the burden and ease the tension of studying. It made the workload lighter as we shared challenges together. Engaging a critical friend has proven to be an effective tool for improving my teaching practice (Baskerville & Goldblatt, 2009). This collaboration helped in observing and assessing each other's teaching practice, which led to continuous professional growth. What is more interesting about my collaboration with my critical friend was that we had communicated and shared our individual and professional experiences, including family matters and work-related problems that we face in our lives. As Samaras et al. (2004, p. 910) posit, "personal history self-study entails the opportunity to disrobe, unveil, and engage in a soul-searching truth about the self while also engaging in critical conversations, and most importantly continuing to discover the alternative viewpoints of others." From these engagements, we discovered strategies that helped us to understand how we can better improve our lives and our work environment.

Data Collection

In order to get a clearer understanding of my data generation, I provided a table (Table 2.2) to illustrate how my data generation activities and process was aligned to my research questions.

Table 2.2 Data generation plan

Research Question	Data Generation Activities	Data Sources
1. What can I learn from my personal history about teaching Computer Applications Technology in an under-resourced school?	<ul style="list-style-type: none"> • I wrote a personal history narrative about my high school and college learning • Metaphor drawings and memory drawings to visualise all the significant memories of my learning and teaching experiences • Used images, text and photographs to guide me and prompt significant memories and feelings of my lived experiences. • I collected art-based and digitally based artefacts to evoke my educational memories 	<ul style="list-style-type: none"> • Metaphor and memory drawings • Collage making • Journal writing • Artefacts, photographs and journal recording • Audio recorder and a notebook
Research Question	Data Generating Activities	Data Sources
2. How can I improve my practice of teaching Computer Applications Technology in an under-resourced school?	<ul style="list-style-type: none"> ▪ Reflecting on my past experiences and recording entries in my reflective journal ▪ I gave the participant a photograph of us and asked her to discuss what it reminds her off. ▪ Participant was asked to narrate any significant memories extracted by the photographs ▪ Metaphor and memory drawing was used to paint a clear visual picture of my learning and teaching experiences 	<ul style="list-style-type: none"> ▪ Reflective journal ▪ Photographs ▪ Stiffy disk ▪ Audio recorder

Table 2.2 Data generation

As indicated in the data generation table, I employed different techniques to engage myself and my participants. As advised by Creswell (2009), successful research is produced from employing good quality data acquired through a variety of data-generating methods during a research process. Hence, I used multiple self-study research practices such as journal writing, collage making, memory drawing, and photographs to explore my learning and teaching experiences. When collaborating with my participants, we worked with artefacts such as photographs and also audio recorded sessions which ignited my past memories.

Journal Writing

Journal writing formed an important part of my research process as I used it to reflect and record memories of my past personal history of my learning and teaching of technology as well as suggestions and discussions with my supervisor and critical friend. Journal writing allowed me to reflect on my past learning experiences and my research journey (Masinga, 2012). Pithouse, Mitchell and Weber (2009) explain that using journal writing promotes teacher development because it allows freedom to write one's ideas including feelings and thoughts casually without adhering to any format. Hence, I always carried my journal with me all the time, to be able to record all my planning for my research as well as my thoughts and feelings without following any structure. The journal writing not only helped me to come a better understanding of myself as a CAT teacher but also made me get a clearer understanding of my teaching environment.

Initially, I had planned to use an online journal because as a CAT teacher I find working with technology more accurate and efficient. I installed an online application program on my device and started recording entries. As LaBoskey (2004) attests, "we need to use methods that will provide evidence to us, to our students, and to our colleagues that we are discovering that we are reframing our thinking and transforming our practice in defensible ways" (p. 824). Unfortunately, after using the online journal for a while, the application software crashed and I was unable to retrieve all the recorded entries so I opted to working manually. This incident was an eye opener for me in terms of challenges we might experience during the research process. In addition, one of my participants was techno-phobic which presented a challenge for me. This incident reminded

me of my first handwritten journal entry I made when the application software crashed. My journal entry below expresses my frustration.

I am confused and frustrated at the same time, I don't know what to do now. I have tried everything in the book to try and open my journal from my device. I have mixed feelings; a little voice is telling me to de-register because nothing seems to be working with my study. I am experiencing one challenge after the other. (Personal Journal entry, 12 May 2018)

This incident taught me to first check the reviews about the application before I install it on my device to hear other's advice and comments. Similarly, in life, we need to seek advice from other people to help confront any challenges. It was because of this feeling that I decided to share my feelings and emotions with my critical friend when I felt nothing was going right. To which she responded by saying, "why don't you get back to the manual journal writing method, you need to get an A5 notebook or a journal that will fit in your bag and record your entries." This gave me the drive to continue recording my thoughts, emotions and reflections especially after each activity with my participants and my critical friend. Pinnegar and Hamilton (2009) postulate that journal writing gives an individual an opportunity to express their thoughts, feelings and emotions. My journal then became a vital resource for me during my study.

As indicated I arranged a meeting with my participants shortly after this incident because I was now motivated and wanted to move ahead. To add to my dilemmas, they did not show up because it was cold. I was once again plunged into despair and I took much time and thought and reflected on this experience and my entire research journey and I recorded my reflections in my reflective journal, expressing how disappointed I was. I took my cue from Masinga (2012) who said that a journal allows space to reflect and look deep at the experiences from the research journey. My journal entry thus aptly portrays my emotional state at that point.

Today is a gloomy day for me, I am sad due to participants letting me down, what upset me most is the lack of honesty. How I wish they were

frank with me and told me upfront that they won't be able to make it today. What frustrates me is the fact that this appointment was rescheduled by them after failing to meet during winter school holidays. Here I am sitting all by myself at a venue chosen by one of them. My journey though!"
(Personal Journal entry, 16 July 2018)

Artefacts

According to Mitchell, Weber and Pithouse (2009), artefacts are objects that have sentimental attachment that could be connected to childhood memories which sometimes, words cannot describe. Mitchell, Weber and Pithouse further affirm that, “physical objects trigger memory within qualitative research” (p. 227). In my case, the artefacts I used included photographs, a stiffy disk and certificates that played an important role in prompting my memories. In agreement are Allender and Manke (2008) who state that artefacts are objects that form a significant element of the research topic. The artefacts helped me to respond to my first research question: *What can I learn from my personal history about teaching Computer Applications Technology in an under-resourced school?*

In this study, I used a stiffy disk as a personal object for data generation to help me evoke memories of my personal history which assisted me in addressing my second research question: *How can I improve my CAT teaching practice in an under-resourced school?* I also brought a stiffy disk that I used when I was a computer studies student, as an artefact to one of the meetings with participants. When she saw the stiffy disk, my college friend was immediately taken to our college days (more details in Chapter Three). This is in line with what Allender and Manke (2008) concurred that “artefacts come from our past and are found in file drawers and dusty boxes drawn on as we engage in analysis of our work” (p. 21). The artefacts solicited the pleasant and unpleasant computer learning experiences.

Mitchell, Weber and Pithouse (2009, p. 119) contend that “the use of visual approaches to self-study can literally help us see things differently.” For example, when looking at a photograph of my mother and I (see Chapter Three), I reflected deeply about her love for me. I became aware of the significant role my mother played in raising me to be the woman I became especially in my

educational journey. Having embarked on this journey and working with photographs, helped me gain understanding of the crucial role my mother played in motivating my learning.

Photographs

In this study, I used artefacts to assist in eliciting memories related to my lived experiences, to make sense of my learning and teaching. Photographs in this work were used as a tool to elicit memories and feelings of the past, as I recalled my childhood experiences. Samaras and Robert (2011) explains that visual materials such as photographs play an important role in bringing memories to the fore and can help others to relive the experience. This became important as I attempted to respond to my first research question: *What can I learn from my personal history about teaching Computer Applications Technology in an under-resourced school?* I collected specific photographs from the old family albums, which allowed me an opportunity to go down memory lane. I remembered looking at the family albums and seeing my mother and I in the photograph. I was gripped with happiness while I reviewed this photograph in particular, as it brought back loving memories I shared with my mother. Looking at family photographs prompted memories that helped me to understand how I was socialised considering the influence of the social context on my personal and educational journey.

According to Mitchell and Weber (1999), artefacts are there to help us perceive things differently in an open-minded manner. Instead of looking at the beauty of the photograph, I got an opportunity to discover the deeper meaning of what was in the photograph and I got to understand what was happening when the photo was captured as well as its surroundings. Mitchell, Weber and Pithouse (2009) stipulate that photographs play an essential role in triggering memories. I remember the first photograph I selected of myself as a little child tinkering with a sound system. It triggered my memories of my excitement and love of technology. Looking at the photographs helped me gain an understanding of where my love for technology emanated from.

Artefacts such as photographs are responsible for stimulating thoughts and feelings. I chose to work with family and school photographs to help retrieve my childhood memories of my learning context. Mitchell and Weber (1999) posited that “recounting memories in a social context may contribute to constructing these memories in a particular way” (p. 12). The photographs played a

pivotal role in creating a relationship between life stories and narrating my lived experiences as it allowed me to go back into that moment and relive that story.

Memory Drawings

I used memory drawings to help me recall my primary and secondary education experiences in relation to subjects I learned and the teaching approaches used by my teachers in primary and high school. Pithouse (2011) considers memory drawings to have the ability to bring back memories of one's experiences. In this work, I drew images that helped me to re-examine and represent significant memories from my life's journey. For example, I drew a memory drawing that represented my mathematics teachers administering corporal punishment (see details in Chapter Three). Pithouse (2011, p. 43) concurs that, memory drawings can "bring forth the emotions of experiences that happened many years ago." Through memory drawings, I was able to activate the process of remembering my childhood formal and informal learning experiences in relation to my learning and teaching of CAT. I engaged with memory drawing to respond to my second research question: *What can I learn from my personal history about teaching Computer Applications Technology in an under-resourced school?*

Derry (2005) reveals that in her memory drawing experience, she deliberated on how drawing helped her remediate her problem of recalling occurrences as she shared that, "this drawing made all the feelings and details of the situation flood back and I was able to draw the picture" (p. 37). Similarly, the use of memory drawings contributed positively when I was trying to connect with some of my blurry memories of the past. I was able to retrieve all these memories related to my high school educational experiences. Working with memory drawings has been an interesting experience as I am fond of drawing and it helped bring back significant memories for this study.

Weber (2008, p. 44) agrees that memory drawn illustrations allow us to "access those elusive, *hard to put into words* aspects of knowledge that might otherwise remain hidden or ignored." From my memory drawings, I was able to pay attention to my thoughts more clearly which then enabled me to tell my stories with a better understanding of the experiences of my high school learning. Memory drawing has proven to be a powerful tool not only to elicit memories but also as a

therapeutic device as I was able to heal the wounds from my past learning experiences because I was able to share my painful stories.

Audio recording

Audio recordings were used in this work in my discussions with my participants as well as the meetings with my supervisor and my critical friend. The recordings helped me to recall all the activities my participants and I shared in a meeting as I could listen to it afterwards and get a clear picture of how the conversation took place. I wanted to follow the suggestions of Masinga (2012) and used the audio recorder as my extra pair of ears to assist and make sure I did not miss any important details that may have been shared by my participants. I found the audio recordings helpful in gaining an understanding of what unfolded during the meeting with my participants.

Masinga (2012) also revealed that the audio recordings afforded her [the researcher] a chance to re-listen to what she might have missed during the meeting with participants as she was able to go back and forth to gain a better understanding. Likewise, I audio-recorded my meetings with my supervisor to gain a better understanding of what was discussed during the supervision sessions. I was able to playback the recordings and this ensured that I did not miss important elements of the meeting. The audio recordings of the discussions with my participants that took place at school helped me in capturing significant data for my study. Even though permission to record the participants was granted, I learned to use a cell phone recorder instead of a voice recording device and turned it on before the meeting began so that my participants would not feel self-conscious about being recorded and engage in our discussions freely.

Collage Making

Collage making formed an integral part of data generation in my study, where I created artwork from pictures of my educational journey. Collage involved selecting and arranging existing pictures which was less strenuous than drawing an image. According to Khanare (2009), collage-making involves using text, cutting pictures from magazines or newspapers and pasting them on paper to form an artwork. I used collage to help me recall the significant memories and to relive the moments in photography. I selected images that related to my learning and teaching experience, to bring new insight into my past.

Collage portraits helped me revisit my past, which evoked memories that helped narrate the story of my lived experience. Butler-Kisber and Poldma (2010) distinguish three features of collage in qualitative research namely “as a reflective process, as a form of elicitation, and as a way of conceptualizing ideas” (p. 3). The use of collage played a vital role in helping me unpack some aspects of the research to gain a better understanding of the study at hand. This activity allowed me to express my feelings and relived experiences using text and pictures to recall the memories of my lived experiences. According to Van Schalkwyk (2010), collage making is regarded as a therapeutic exercise as it allows revisiting the past events.

Furthermore, a collage has been established to be an effective data generating method (Chikoko & Khanare, 2012). I used collage making to explore and gain a better understanding of my personal and professional experiences focusing more on the teaching of CAT. Selected images were used in the collage making to trigger and retrieve past teaching memories.

Making meaning (data analysis and interpretation)

In this study, I worked inductively to generate and manipulate data in an attempt to provide answers to each research question and to identify patterns in order to make meaning of my lived experiences (Samaras, 2011). The use of the inductive approach also helped me to connect the “emerging patterns, associations, concepts and explanations” (Nieuwenhuis, 2010, p. 107). I worked together with my participants and a critical friend to discover other perspectives. Samaras and Roberts (2011, p. 4) express that “working with colleagues helps extend and transform an individual’s understanding.” I engaged with participants in discussions where they shared their experiences and viewpoints that developed the understanding that helped me generate more data. The involvement of a critical friend also allowed me to obtain alternative perspectives when I was analysing the data.

For this study, I used a collage, which helped me to connect and make meaning of my lived story (Chapter Three) and contribution from participants (Chapter Four) to answer my research questions: “*What can I learn from my personal history about my CAT teaching in an under-resourced school*, and my second research question: *How can I improve my teaching practice in*

an under-resourced school? The collage allowed me to structure and make meaning of the narrative of my lived educational journey and those shared by my participants. For example, I used collage making as “a primary data source for interpretation and analysis” (LaBoskey, 2004, p. 849). The collage was thereafter presented to my supervisor and my critical friend and in return, I received constructive feedback with suggestions from them. The process of collage making helped me to respond to my research questions by allowing me to reflect on my personal history and the contributions of participants.

Ethical considerations

As Creswell (2003) attests, before conducting a study, a researcher ought to obtain confirmation of individuals in authority in order to gain access to an institution and to perform research with participants. Hence, I gave consent letters to my participants and a critical friend which stated what their participation in my study involved and provided them with all the necessary information which included the background of the study, focus and purpose of the study and their rights in the study which included the audio recording of the sessions. I also explained that they were not compelled to participate and they had a right to decline to be part of the study (Parry & Mauthner, 2004) and to be recorded. They completed and signed the consent letter agreeing to participate in this study and they also gave me permission to be recorded. As a researcher, I ensured confidentiality by allocating pseudonyms to participants and no real names were used. Burton, Brundett and Jones (2008) state that confidentiality means that no confidential information about the participant is revealed or made obtainable to others. Anonymity and confidentiality was guaranteed by ensuring that data obtained was used in such a way that no one, other than the researcher knows the source.

I thereafter adhered to the research protocol and process of obtaining ethical clearance. I submitted an ethical clearance application to the university research Ethics Committee and received the approval letter granting me ethical clearance. I wrote a letter to the Department of Basic Education seeking permission to use departmental resources and the approval to conduct this research was obtained. Then I wrote a letter to my school principal as the gatekeeper, requesting permission to conduct research with the teachers and also to use the school premises for meetings and he also approved and signed the consent letter. Finally, I wrote informed consent letters to participants. I felt it was imperative that the ethical issues were taken into consideration for my study to be a

success. (Tichapondwa, 2013). I adhered to the principle of consulting and obtaining informed consent from relevant structures and people, as it is regarded as a major step in research (Samaras, 2011).

Trustworthiness

To establish trustworthiness in this study, I followed the guidelines of researchers such as Feldman (2003). Feldman (2003) warns that “when we engage in reflective processes that focus on us, we cannot be sure of the accuracy of what we see” (p. 27). Working with my participants and engaging various methods to generate data helped me to obtain different perspectives that could help improve my own understanding. Feldman (2003) suggested further, that researchers need to use multiple data sources to have multiple perspectives and to enhance trustworthiness. Similarly, I have used different data sources such as artefacts, journal writing, memory drawing, photographs and collage making to relive and re-examine my personal history.

Research challenges

The challenge I thought that hindered the process of generating data as the principal participant in this study was the fear of dealing with certain memories of my past that I was not comfortable to revisit such as unpleasant childhood places. Nevertheless, narrating my lived experiences helped with the healing process. As a solution, Nash (2004) states that researchers employing self-study should take into consideration the ethical issues when sharing their lived experiences and be responsible to share what they are ready to tackle.

The other limitation was to get hold of as many family and school photographs especially of when I was still a child. To overcome this challenge. I embarked on searching for images from the internet which were somewhat related to what I needed to recall. Another major challenge that delayed the progress of my research was the outbreak of COVID 19 that affected me attending supervision meetings. Also visiting the library was a mission impossible. Fortunately, with technology, we were able to attend supervision meetings online, but network issues were sometimes a problem in the area where I live.

Conclusion

I introduced this chapter by explaining what was discussed in the first chapter then outlined the research methodology chosen for this study. I also described my research surroundings. As well as the data collection methods. I further gave a brief discussion on the role played by my participants and a critical friend in this study. Moreover, I explained the variety of data generation methods I employed. The data generating methods involved a range of activities, from the reflective journal, memory drawings, photographs, audio recording, and collage making. The intention behind the use of various data-generating methods was to help me narrate my lived personal and professional experiences in a more meaningful manner. Thereafter, I discussed the ethical issues involved in my study and how I established trustworthiness. Finally, I explained my research challenges and how I overcame them.

The lesson I learnt from engaging in the personal history self-study is that it allowed me an opportunity to honestly review my own teaching practice with an intention of transforming it to become a better teacher who would inspire others. Secondly, self-study promotes working with other people in [my] study to guide and develop [me]. Thus, I worked with a critical friend who was there to guide me by providing constructive criticism to help improve myself for the better.

CHAPTER THREE:
GOING DOWN MEMORY LANE TO LEARN FROM MY LIVED
EXPERIENCES AND IMPROVE MY TEACHING PRACTICE

Introduction

In this study I focused on teaching CAT in an under-resourced school. According to Samaras and Roberts (2011), self-study requires a researcher to have questions created from self-examining and observing one's own teaching practice with a purpose. Similarly, the purpose of my research was to study my past educational experiences in order to explore different strategies to improve my CAT teaching practice in an under-resourced school.

In Chapter Two, I presented a detailed account of my research design and the methodology used. I also outlined and gave descriptions of the data generation methods used namely the reflective journal writing, photographs as artefacts, memory drawings and collage making that was used in order to help me formulate this personal history narrative. I thereafter outlined my research background and provided information on my critical friend as well as the other participants.

This chapter addresses my first research question: *What can I learn from my personal history about teaching CAT in an under-resourced school?* To respond to my first research question, I took a journey down memory lane in relation to my learning and teaching of CAT. With the self-study, I managed to explore my learning experiences and also scrutinise my teaching experience of CAT in an under-resourced school. The intention was to achieve a better understanding of how

I can improve my CAT classroom teaching practice in an under-resourced school by employing a personal history self-study. As a CAT teacher, self-study made me realise that recognising the significance of reflecting on my past experiences and scrutinising my practice for personal and professional development, embraced the transformation I was so desperately seeking (Austin & Senese, 2004).

My personal history self-study provided me with a valuable chance to critically analyse my lived experiences while looking at personal and professional growth in an attempt to better transform my teaching practice. I used a metaphor of a meandering road and collage making with the intention to elicit crucial memories from my past learning and teaching experiences. LaBoskey (2004) attests that working with a diverse method for self-study would enable me to study myself and my personal experience from different perspectives. In my study, I worked with various artefacts (as highlighted in Chapter Two) such as photographic artefacts and collage making to evoke memories.

In this chapter, I discuss the process of gathering significant memories related to the learning and teaching of CAT. Furthermore, I give an account of different strategies that were useful in eliciting and making meaning from my childhood memories. In addition, I narrate my personal history regarding learning and teaching Technology. I begin my personal history narrative by discussing how I was brought up by two strong women (my grandmother and my mother) at home. Thus, I believe that learning starts at home through primary socialisation where moral fibre and beliefs are instilled in you while you are adapting to the culture of how things are done through learning from adults. Hence, whatever experiences a child gains at school, she or he connects it with experiences gained from home. I also narrate my primary and high school personal history regarding learning and teaching in an under-resourced school. Lastly, I recount my college and high school experiences concerning computer learning and CAT teaching experiences. I concentrate mostly on my college years because they are more relevant to my current teaching practice as a CAT teacher.

Furthermore, I show how my personal history narrative is represented in the form of a collage. I discuss how I created a collage using a meandering road metaphor and presented it to my supervisor and my critical friend. I also elaborate on the relevancy of using the collage in consolidating and reflecting on my learning and teaching from my personal history.

A Road Trip of my educational journey

My informal learning at home

In thinking about my personal history, I needed a tool that will help me elicit and gain a better understanding from my memories. Hence, I used collage making for this study to prompt my childhood memories and narrate my story. I created a collage as a mode of data-generating which I used as an art form employed in qualitative research (Butler-Kisber, 2008). Creating the collage enabled me to tell my personal history narrative of how I experienced my learning and teaching of CAT. Van Schalkwyk (2010) concurs that collage can be resourceful in telling personal history stories, as it allowed me an opportunity to look back at my learning and teaching journey. I believe that the way I was taught at home and at school has had an influence in shaping the kind of teacher that I am today.

The collage helped me illustrate a visual representation of my personal history that captured different contexts of my learning experiences from primary school, tertiary learning and my teaching experiences. I spent a lot of time looking through family albums in search of photographs to create a collage that would represent my educational experiences as Butler-Kisber (2008) describe the collage as a “process of cutting and sticking found images and images from popular magazines onto cardstock” (p. 265).

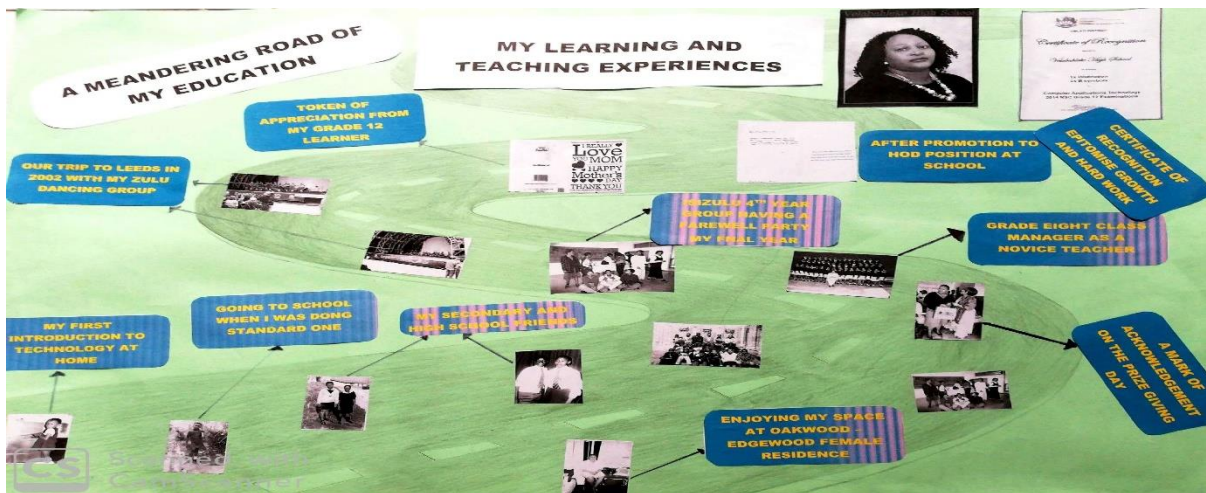


Figure 3.1: My collage showing different learning stages of my educational experiences

As part of my process of thinking about and writing my personal history, I used our cohort meetings and supervisor meetings to present my collage to my supervisor and my critical friend. This was to engage them in a discussion that was based on my collage. Through my supervisor and critical friends, I was able to enrich my story as they commented and asked questions based on what I was presenting. From their contributions, I was able to discover new meanings and gain a better understanding of my personal history. My critical friend asked questions such as “what is the significance of the road in the collage and what the destination is?” I explained to them that it represents the journey I travelled on from primary school education to my current teaching profession. Her questions made me aware of the teaching experiences that I forgot to include in the collage. My supervisor’s concern was the inclusion of the greeting card in my collage. I pointed out to them that I felt learners showed me love when they gave me that Mother’s day card. I realised that caring and showing learner’s interest in their learning leads to a good and healthy teacher-learner relationship.

Growing up as a child at home

I believe that my learning journey began at home where I obtained my first education through primary socialisation where all the learning took place and played an essential role in developing the woman I am today. I see the role of family, especially parents, is to provide a child with guidance that will assist the child to become a functional individual in society. Likewise, my parents including grandparents played a crucial role in guiding me towards becoming a better person in life. Crisogen (2015, p. 331) claims that primary socialisation involves “learning the rules of behaviour, norms and values that can be treated at early ages and that is informational and emotional baggage of any person.” As a child, I also learned the norms and values such as respect, honesty, love and religion from my parents.

I grew up in a township, living in what I saw as a four-roomed matchbox house as it was referred to when I was young.



Figure 3.2: Photograph of a house that resembled the one I grew up in

The house had four rooms; the kitchen, a toilet with a shower, two bedrooms and a sitting room which was referred to as a dining room yet there were no dinner tables and chairs. I was the only child amongst the adults namely my maternal grandparents, my mother and mother's sister (aunt), uncle and my two cousins. I was raised by my grandparents, but my grandmother was the one I spent most of the time with, as she did not work. Living in this four-roomed house, sometimes there would be more than twelve people residing in it. However, we were very happy and enjoyed each other's company. Sometimes the extended family members would come from the rural area to look for jobs in the cities and they would stay with us. Though sleeping was a bit of a problem as others would sleep on the floor in the kitchen or in the so-called dining room. We did not mind because overcrowding has always been a part of a black person's culture. As a child, I used to sleep in the dining room which I enjoyed because it allowed me to listen to the radio and the many drama shows that played at night.

The two important women in my life: my grandmother and mother



Figure 3.3: A photograph of my grandmother-Ugogo

My grandmother was the leading lady in my life. She was a strict, God-fearing woman who lived by the principles from the bible. She had four children, one son and three daughters, the second daughter being my mother. She was very active even though she was in her late fifties. She strongly believed in manual labour and spent most of her spare time in the fields ploughing. She instilled her gardening hobby in me as over the weekends, I would spend my day working in the garden. We worked together most of the time.

Gardening equipped me with the ability to plan and organise my work well, as planting involves proper planning and organising as to what can be planted, during which season, as well as how to prepare the soil for a certain type of seed. I learned to grow my own small little garden that had carrots, cabbages and spinach. It was very fulfilling to see my plants grow and reaping the fruit of my hard work at the end. I used to get angry sometimes when my grandmother asked me to do garden work yet today, I am grateful for the benefits which I realise now were life-changing. I enjoyed spending time with the plants as looking after them brought a calming effect in my life as a child and it taught me more about responsibility as I had learned to take care of my seeds by watering them every day after school.

She also taught me how to nurture the plants by watering them and removing the weeds to allow them to grow well. Our family survived from subsistence farming as my grandmother grew sufficient vegetables for our family and also made a living from selling mealies. At home, we never bought vegetables from the stores. Instead, every weekend after harvesting the vegetables, my mother and mamncane (aunt) would sell raw and cooked mealies at local train stations. As a family, we were dependant on the garden to survive. My grandmother taught me to be self-sufficient through gardening and even now, I hardly buy vegetables from shops or markets as I grow my own vegetables. She empowered me with survival skills and taught me to be patient in life and not to expect to get results immediately because I used to be impatient as I did not understand when seeds took long to grow out of the soil. She used that as an opportunity to teach me how good things took time to happen and that “good things come to those who wait.” She used to purposely delay things for example whenever I asked for something, she would not give it to me immediately. I used to look forward to Christmas because that was the only time, new dresses and new shoes were bought. That lesson on its own taught me to be very patient person knowing my turn would come if I wait for things that matter in life.



Figure 3.4: Memory drawing symbolises how I used to water the garden

As the only child, I had many responsibilities and chores to do because my grandmother made sure that as a girl-child, I was always occupied with things to work on. She used to say *ayikho inkomo yobuthongo*, meaning “there is no cow that benefits from sleeping” which is the same as “make haste while the sun shines.” She used to say, “As a young woman you need to invest your time on

harvesting what you sow.” Therefore, I spent most of my time at home doing housework like cleaning and working in the garden, planting and looking after my plants. Today, as a mother and a teacher, I always find something to keep myself busy be it schoolwork or cooking, which I enjoy most or doing any other domestic work. I appreciate my grandmother’s teachings as these home and garden activities promoted the hands-on mentality in me and created my affinity for practical subjects. Her teachings also inculcated in me the wish to take care of the environment, which is why I learned more about pollution, planting to avoid soil erosion and the concept of recycling. My involvement with gardening taught me to be patient as I had to wait patiently for the plants to grow, developing from the seed stage to seeing the actual vegetables growing.

My grandmother taught me the Godly principle of giving, from the bible. She placed emphasis on two very important teachings from the bible. Firstly, she told me to love the Lord our God and to obey my parents and adults. Secondly, she explained the need to give and share with others especially those who are in need if I wanted to be blessed. I still remember the verse she told me from Proverbs 19: 17 it which says, *“Whoever is generous to the poor lends to the Lord, and He will repay him for his deed.”* I remember in class we were asked to donate money for an event that was forth coming and I had only 10 cents for pocket money. During recess, I ran straight home to report that the teacher has taken my money. My grandmother sat me down and gave me a good lesson on why obedience is important if you are a child of God. She further explained that sharing and being generous to others is the right thing to do and God will bless me. She thereafter emphasised that *“Mrs Zulu is representing me and your mother at school therefore you must be obedient to everything she says to you.”* My grandmother sent me back to school with a message that Mrs Zulu (pseudonym) should give me a hiding because I dodged the class. I learned a lesson, that it is my responsibility to give or help the needy people because God has first provided for me.

When the cat was away, the mice would play

At the end of every month, my grandmother used to travel and visit our homestead in the rural area. Then it was time for me to have fun and play with other children. The bigger children used to help us invent new games to play other than playing indigenous games. We did not have toys to play with due to the economic status of our families. The socio-economic status of our families has not only affected our education but even recreation was a problem. As a result, we were unable to entertain ourselves like other children because we had no toys to play with. This did not discourage us. We had to tap into our innovative and creative skills where we used old material to design our own balls to play with for example, we used to collect plastics and papers and made balls out of them.

We used to collect old pantyhose and tie them together to form a rope. We used to play the game “Umagalobha”. Umagalobha is one of the indigenous games played by three girls, where two girls will get into the stocking with their bodies at opposite ends like a hula-hoop. The third girl would hop in and out of the stocking. Umagalobha starts at the ankle and moves up to head level but only tall people reached that level. Playing is important for children’s healthy social development. The loss of opportunities for playing is a problem as Daubert, Ramani & Rubin, (2018) claim that children who play more are more self-regulated, co-operative, considerate, friendly and socially competent. If it was not for school, I would have been robbed of the benefits of playing as a child.

My friends and I used to imagine ourselves working at an office and we would pretend to engage in a telephone conversation in an office environment. We used to collect recyclable material such as used cans or even baked beans cans to make telephones to communicate. We would collect and wash the cans and then hammer a nail through the bottom of the cans to make holes to thread the string through. Then we used to thread a piece of string through the bottom of one of the cans then make a knot in the string at the bottom on the inside so the string stays attached to the can, then do the same with the other can. To test that the “telephone” worked, we used to hold the one can and then give the other one to someone to walk away from each other till the string cannot go any further. Then we used to have a loud conversation speaking into the cans to see if it works.

My grandmother would return after a month or weeks from the homestead and immediately shut down my fun world. It would be time for me to go back to the cocoon where I hid myself and no more playing on the road with my friends. The first thing she would notice was her plants and she used to complain about me deserting the garden and said “Zaze zafa izitshalo zami, ziyabonakala ukuthi kade zawagcina amanzi” which means “my plants are dying, they are showing that they have never received any water since I left”. When she was back, everything was in order at home back to my normal routine because with her it was work all the time.

My mother: my source of inspiration



Figure 3.5: Photograph of my mother and I taking a walk

My grandparents used to send my mother to buy groceries at the supermarket as she was still seen as a child herself. These were special times for me as I got to spend more time with her. My mother would spend her spare time taking a walk and playing with me when she had no commitments. Ginsburg (2007) claims that “when parents observe their children in play or join them in child-driven play, they are given a unique opportunity to see the world from their child’s viewpoint as the child navigates the world perfectly” (p. 183). This created a firm relationship between us as we played like friends. I could tell my mother felt younger when she was playing with me. Spending quality time with my mother was priceless when she told me how beneficial these walks were to her mental and spiritual being.

At an early age, my mother merged as my source of strength and she had to bring me up all by herself, as my father was not present due to illness. My mother was a young sixteen-year old township girl when she was forced to share parenting with school work. My grandmother used to tell me stories about how my mother performed her mommy duties for example:

She woke up as early as four in the morning and she had to take care of mommy duties. Wash your nappies and clothes and cook porridge and prepare everything that was required for the baby's comfort before she left for school. She made ends meet by doing casual work on weekends to earn some money to cater for all the baby's needs. She worked very hard to raise me and at the same token she made sure that she dedicated her time to her studies since she was a schooling mom. I can only imagine how hectic that was for her to even cope in class with such a hectic schedule every day. With all the courage and determination, she had, she pulled through it all.

She was still at high school doing her form three (grade eight) when I was doing lower grades that is grade one to grade four. My mother and I used to have learning sessions every day. She would come back from school with her homework and she would teach me how to read and count. That is how I got to learn to love my school work. According to Stoodt (1981) “parents who spend time with their children are encouraging language development.” He further attested that “love, patience and understanding foster a sense of security that is the groundwork upon which successful learning can occur (p. 39).

My mother invested her time in my education. My schoolwork was her first priority. Even when I had a project to do, she would help me do it. Even at night during bedtime, we had storytelling time. We spent time together talking or her telling me folk tales that were motivating me to be courageous, work hard and to never give up in life. She would ask questions and I would answer, sharing an understanding and ideas based on the story. I enjoyed reading the folktales as they had moral lessons at the end which promoted love.

I always looked forward to our night sessions as we spent time in bed together having an interesting conversation about anything and everything. Those sessions developed a strong bond between us

and I treasure these memories and will cherish them for the rest of my life. I learned a lot about life from them and they brought a sense of encouragement to love school and improve my performance in spelling in class. It also laid a strong foundation for my language development as my vocabulary also improved. The learning sessions we had helped improve my reading and spelling ability. I did well in numeracy and literacy because my mother was always there to help me learn.

I remember how she used to praise me, by saying “*Yasebenza intombazane yami*” which is directly translated as “*well done my girl.*” She would say this whenever I did well at school, which showed me how proud she must have been of my school performance at all times. I knew I had to work hard to impress my mom and make her happy. She always reminded me of the importance of education, which did not make sense to me at that time as a child but nevertheless I always strived for success in whatever I was doing, failure was never an option. I was in high school when I learned how hard my mother worked just for my well-being because then I could see other children being supported by both their parents. That is the drive that motivated me and kept me pushing me even when the going got tough, I worked to the best of my ability. My mother studied further and became a teacher at a later stage. Besides that, I come from a family background of teachers, both on my maternal and paternal side.

My mother has had a positive influence on my life in a more profound manner than I ever imagined. I commend her strong and resilient character as well as the value of working extremely hard to bring me up all by herself as a teenager. Now, looking back, I can only imagine how stressed and frustrated she might have felt. She inspired me with her “never give-up spirit.” My mother was very passionate about education and she was always with her books which promoted my love for reading. She made sure that she assisted me with reading because she also read the very same books at school. I was also excelling in my spelling tests. I remember whenever my mother was busy with her schoolwork, I would take my book and sit next to her. My mother was my role model, and she obtained her teaching qualifications from studying part-time while teaching as an unqualified teacher. That on its own encouraged me to push and work even harder, Thus I managed to pass my Senior Certificate Examination (Matriculation).

My primary school education journey

I started school during the apartheid era and my lower primary (LP) school was attended by black children only (Cole, 2011).



Figure 3.6: A photograph of me wearing my lower primary school (LP) uniform

I started attending sub-A (Grade One) at four years of age in the Lower Primary school as a visitor because my mother could not afford to take me to a crèche as she was also schooling. I was the youngest and the tiniest in class. Hence going to school provided me with an opportunity to be happy and at the same time get an education and my ticket to all the freedom you can imagine. That is where my love for school began and the seed of education was planted.

What I enjoyed most in class was drawing when I was in Sub-standard A (Grade 1), I used to draw a stick man and was very good at it. Even today, I enjoy drawing and colouring because it promotes creativity and is therapeutic as it allows me to express my feelings and experiences and it promotes creativity. Brooks (2009) concurs that “through drawing children are not only able to see what they are thinking, they are also able to play around with and transform their ideas” (p. 319).

My teacher showed interest in my drawings by asking questions like who is in the drawing and why am I not in the drawing?



Figure 3.7: Memory drawing of stickman I used to draw at Lower Primary school

As a little girl, I used to enjoy my walk to school, though it was a bit far but my tiny little legs never failed me. There was no car at home or *malume* (uncle) to take me to school. I would walk by myself to school and would never miss school for anything. I was a very active, outspoken, tiny and pretty little thing that was adored by all the teachers at school as my mother used to say. This is also the reason for my loving school. School was my little haven and I was always keen to be at school and my mom made sure that I have everything I needed. That love and support always motivated me to do my best in class. The school was where I enjoyed being a child, playing and learning. According to Ginsburg (2007), as children play, they learn to cope with frustration, to continue to try to improve, to share with others, to give vocal expression to their thoughts and fantasies.



Figure 3.8: A photograph showing a township school building such as the one I attended

Due to the limited number of educational resources such as furniture and classrooms, the school used a system called platooning. Platooning is a system that was used to accommodate the problem of overcrowding of learners in school. Platooning is when teachers and learners were distributed over two sessions a day. There was a morning group that started school from eight o' clock to eleven o' clock in the morning and the next group started from eleven o' clock to three o' clock in the afternoon. For platooning, we used pre-fabricated classes as the school had limited classrooms.

The overcrowding in classrooms and insufficient number of classrooms and limited desks resulted in using benches for both sitting and writing, which were also limited. When it was time for writing, we would switch to kneeling on the floor so as to write on the bench. Overcrowding was not such a big issue to us as children since we were used to overcrowding even in our homes. In summer, we enjoyed learning under trees on a sunny day as classrooms were small and we were suffocating since it was extremely hot inside. Therefore, our teachers would teach us outside the classroom during the summer season. We used to sit on the ground as there was not enough furniture even in the classrooms. Learning was fun in the sun.

Our teachers made sure that learning and teaching took place regardless of the conditions. They made sure they came up with creative teaching strategies to make sure teaching and learning took place. Since there were no resources, they used songs and dance to teach whatever concept they wanted to teach. We used to sing songs such as “up and down” and the teacher would demonstrate this by lifting her hands up and down while singing as well and demonstrating actions of sitting and standing while singing. In isiZulu classes, I learned the names of the fingers through singing: “ngineminwe emihlanu engiyibiza ngamagama” which means “I have five fingers that I call by names.” In the mathematics class, teachers would ask us to bring things like ice cream sticks, bottle caps or even stones to use as counters.

There was no library and no school hall for morning assembly. We would gather in the quad for morning devotions and prayers. If it was raining, we would pray in our classes. The school started from Sub-A (grade 1) to standard two (grade 4). We only had female teachers in the school who were mature elderly women who showed us lots of love and care. The school had only three buildings separated from each other. There were three classes in Sub-A, a Sub-B building and an

administration block which comprised two rooms next to each other. In the building, there was the principal's office and a staff room. Then another building housed 3 classrooms for standard one and two. The school environment was warm, welcoming and safe though poorly resourced.

Learning in the primary phase was more fun because of the nature of teachers I had. They were elderly like my grandmother, caring and loving. I remember the strategies of learning and teaching that were employed by my primary teachers. Everything we learned through singing rhymes whether it was numeracy which was referred to as Izabalo zekhanda (Arithmetic) or reading for literacy. I remember how I enjoyed the teaching and learning of my mother tongue (isiZulu) language because there was lots of singing, dancing and drama involved. For example, this popular poem:

Mina ngiyithiphothi/I am a teapot

Mina ngiyithiphothi	<i>I am a teapot</i>
Mina ngiyithiphothi	<i>I am a teapot</i>
Nasi isibambo sami	<i>Here is my handle</i>
Nasi isibambo sami	<i>Here is my handle</i>
Nawumbobho wami	<i>This is my spout</i>
Nawumbhombo wami	<i>This is my spout</i>
Mbobho Thulula Thulula	<i>Pick me up and Pour me out</i>

Mina ngiyithiphothi (author unknown) is one of the isiZulu poems that we used to recite by heart without any understanding, when I was in standard one (grade three). The poem is about the life of a teapot describing itself and its functions. I still remember it very well and the dances we performed when we recited this poem. Our teacher taught us to dance as if we were old, ugly and tired silver teapots.

For reading, we learned short stories from the same book from sub-A to Sub-B called Masihambisane which had a series that varied in degrees of complexity. I knew all the stories in each series. I remember how good I was at spelling and dictation in class since I was always reading my books because for me books held a special place in my heart.



Figure 3.9: An image of the isiZulu short story book *Masihambisane*

This textbook was prescribed to read for isiZulu language short stories. We shared the textbook as there were not enough for each learner, thus our teacher employed the pair reading strategy. I remember the fun I had during the literacy and reading session because there was so much excitement in the class. The classroom was and learning was fun and easy. Apart from reading done during the literacy lessons, we were also introduced to learning through listening to the radio lessons.

I am reminded of an interesting teacher, my grade three teacher Mrs Yanga (pseudonym) who used radio lessons to teach. She would sit us on the floor in a circle and place a small box which produced a sound. I later understood this to be a radio which she would place in the centre for us to listen to educational programmes or folk tales called *Zamdokwe amabele avuthiwe*. Since I was not familiar with a radio, it used to make me very happy and I would enjoy the lesson.

The radio technology was the first source of technology that I was introduced to by my teacher. According to Odera (2011), the radio is able to present an educational lesson with excellence to different learners coming from different disadvantaged backgrounds. The lesson was interesting as I was learning new things such as different animals that lived in the zoo and the teacher would ask questions after each session to be sure we were listening. I did not know anything about a zoo but with the help of the radio, I learned about animals like bears, tigers and lions. In the class, we used to compete to answer first, to all the questions asked by the teacher.

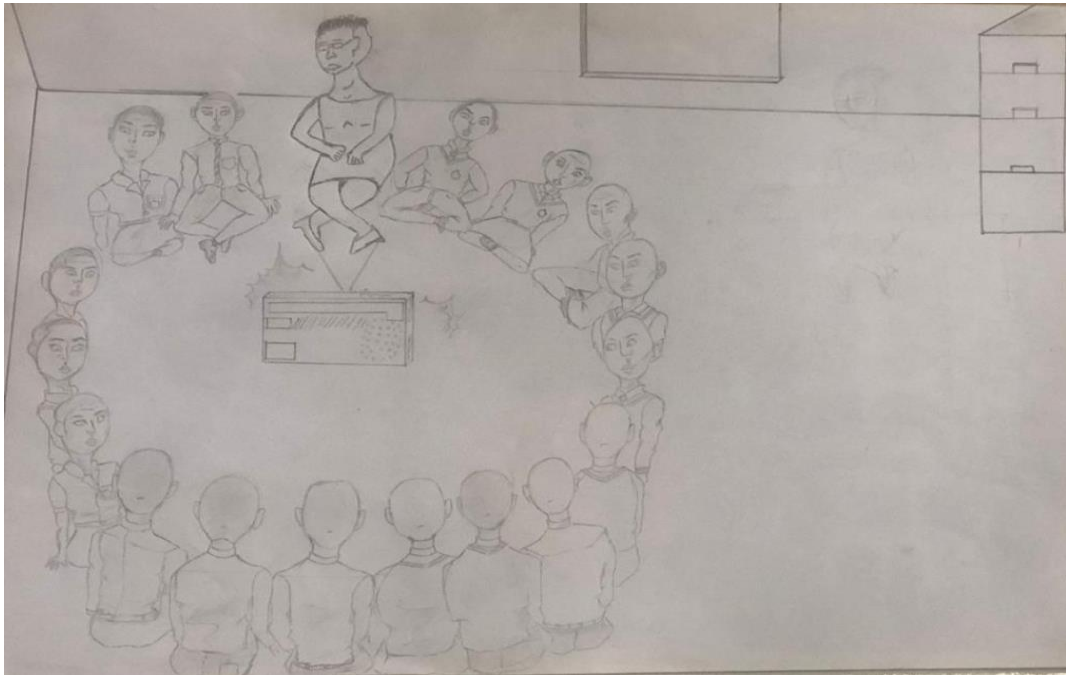


Figure 3.10: Memory drawing of my classmates sitting on the floor listening to the radio lesson

I felt that the radio was more effective for me than the textbook as I used to get bored with reading out of the textbook. The radio provided a new teaching resource in the classroom which improved [our] learning ability (Couch, 2001). Through the radio as a teaching resource, I was able to interact with the outside world through storytelling as well as dramatisation.

A new love for the radio was introduced by my teacher. as I became obsessed with the radio lessons such that she noticed my interest. My teacher would then ask me at intervals to explain to others what the story entailed or she would pause the radio in the middle of the story and asked me to complete the story. I became good with my listening skills and my vocabulary also improved. I was thereafter selected to be in charge of collecting the radio from the principal's office and operate it in class, and also to return it after the lesson.

As learners, we were also introduced to rote learning. Vrey (1979, p. 77) points out that rote learning “involves learning the material by memorising it without relating it to the mental structures.” It felt like we were taught without any background knowledge and understanding needed to master the material. Looking back, I can see that with rote learning we were passive

recipients of knowledge. The teacher wrote ten to fifteen words on the chalkboard, we then had to repeat each word more than four times. Thereafter, the teacher felt we have mastered the words. Days after that, a test based on spelling and dictation would be administered. The teacher would call out the words and also read sentences from a passage from a story. And we had to write it down in our books. I used to pass these tests even though I did not understand what I was taught. I used to regurgitate from memorising the words as I sang them with the teacher.

The good thing was that the feedback to us was given immediately. I learned through memorising most of what was learnt in Lower Primary (LP) without comprehending what I was learning and we were rewarded for memorising. I knew if I get my spelling test correct, I will be rewarded with sweets from my teacher. Education in the LP was interesting and easy as we learned through playing games that involved singing and dancing as well as listening to radio learning programmes designed for literacy and numeracy.

Life in Lower Primary school was fun and interesting as teachers were friendly yet very firm. Not only was everything about learning because we also had time for playing. There were different games teachers included in our lessons. From the different games that we used to play, we were forced to pay attention and listen to the teacher in order to understand the rules and apply them correctly (Ginsburg, 2007). I am reminded of a game that our teacher made us play, which was to find an object from a box full of different objects. She would give a learner a description of an object, for example, she would say “find a green object that has three sides” and I picked a triangle which was green in colour and the teacher gave me sweets for getting it right. Just as Willis (2007) attested, games make the learning process fun which also eliminate stress in learning which has the potential of arousing interest in any lesson, these games motivated me to love learning more and to pay attention in the class activities.

My learning experience in primary school was beneficial as I gained life skills as I was taught punctuality, respect and keeping myself and the environment tidy as well as to obey school rules. The school had time allocated for [us] learners to play, even though there was poor infrastructure and no proper playing grounds and facilities dedicated for playing, we had to engage in sport. We had no playgrounds for sport but we enjoyed playing on the gravel, as we played indigenous games.

Whenever I had time to play, I would spend it creating or engaging in role-playing. I would also be playing with my friends, and I will be a teacher writing on walls and they would be my learners. Not only was I exposed to learning our teachers introduced a girls organisation called Brownies. The aim of Brownies was to equip young girls with life skills. When I was eight years old doing standard two (grade four), I joined the Brownies, which was the same as girl guides for young girls from age seven to ten.



Figure 3.11: A photograph of Brownies wearing the uniform I used to wear as a Brownie

Being a member of Brownies shaped me to become a responsible person. What attracted me to the Brownies was the activities that they used to engage in such as games, recycling old objects to make things like braiding bracelets, we also made vases from old cans and jewellery. We learnt first aid, got involved in community projects, story-telling; drawing, singing and craftwork where we made doormats using grass. To qualify as a Brownie, I had to complete two tasks which involved attending four consecutive Brownie meetings and also learning the Brownie Promise, Law and Motto. I still remember the Brownie Promise by heart which reads as follows:

*I promise that I will do my best
Be true to myself and develop my beliefs
Serve the community and
Help other people and keep the Brownie Guide Law.*

The Brownie Guide Law states that a “Brownie is truthful, obedient and cheerful. A Brownie thinks of others before herself.”

I was thereafter confirmed as a Brownie. I enjoyed attending meetings every Wednesdays after school where we learned about good behaviours and sharing of ideas. We worked in groups to develop solutions to given problems that emanated from school or the community. I earned different badges for completing challenges. The Brownies also had outings which involved interacting with others by going on day trips to meet with other girls and even weekends away from home.

Unfortunately for me, my grandmother did not allow me to participate in those trips. Sleepovers were worse and going on camps during holidays was not permitted. Mrs Zuke (pseudonym), the Brownie leader at the school was made to understand by my grandmother that I would not be going on such trips. However, I enjoyed that opportunity of being a member and had lots of fun during the afternoon meeting as we played games and attended meetings that were designed to develop leadership, self-confidence and independence in young girl. However, the lack of resources to help us perform some the activities, was always a hindrance in my school.

Challenges in my learning.

In 1981 I graduated Lower Primary (LP) School and had to attend the Higher Primary (HP) School which was a few meters away from the previous school. Little did I know that in the following year I was moving to a boarding school. My mother kept it as a secret that she was taking me to a boarding school. She was compelled to take me to a boarding school since she had completed her form five (matriculation) and she needed to further her studies. She was accepted at a hospital to train as a nurse, therefore, she had no one to look after me. That brought a change in my life as I was introduced to a new boarding school life experience.

My first day arriving at this huge school with rooms to sleep in called “*dormitories*” which we referred to as dorms, was all strange to my eyes as I have never seen this type of educational facility before. The fact that I would sleep in a room with so many strangers made me anxious. At first, I did not cope. I felt lonely, homesick with the thought that my mother had deserted me. Eventually, I made new friends and got used to the idea that I was stuck there. I learned to be independent, disciplined and manage my time. I eventually adjusted to the routine and developed self-confidence.

My mother would come once a month to visit me only when she got time off from work and had money to buy me essentials. At this school, I was not allowed to call home. I would get a message from my mother’s call once but I was allowed to write letters to our families. Although boarding school was fun, “*there is no place like home,*” and I sometimes missed home. But I was grateful for the time I had to play and I enjoying that compared to home. More time was dedicated to studying and I completed three years at the boarding school and completed my primary school education in 1986. My mother completed her nursing diploma and life was back to normal.

Back to square one –Back to life at secondary school

I was used to boarding school life and was looking forward to returning to a boarding high school. Unfortunately, my mother had other plans. She had completed her training and become a qualified nurse and she wanted to spend more time with me to recover the lost time I spent at boarding school. She told me she wanted us to spend more time together and see us grow together. I loved

her more for showing me the love I was missing while in boarding school, I was spoiled and she did everything in her power to make sure I am well looked after.

In the following year, 1989, I enrolled in a high school in one of the townships that was very far from home. I used a bus to travel to school as it was a long distance from my home. Despite the fact that I was a grown young woman, I was nervous about going to a new school again. Time passed and I quickly adapted to the township culture of travelling though I had to wake up very early in the morning as the school began earlier than what I was used to. High school became complicated for me as there was more work compared to primary school. The other thing that compounded my problems was the corporal punishment that was practised by the teachers.

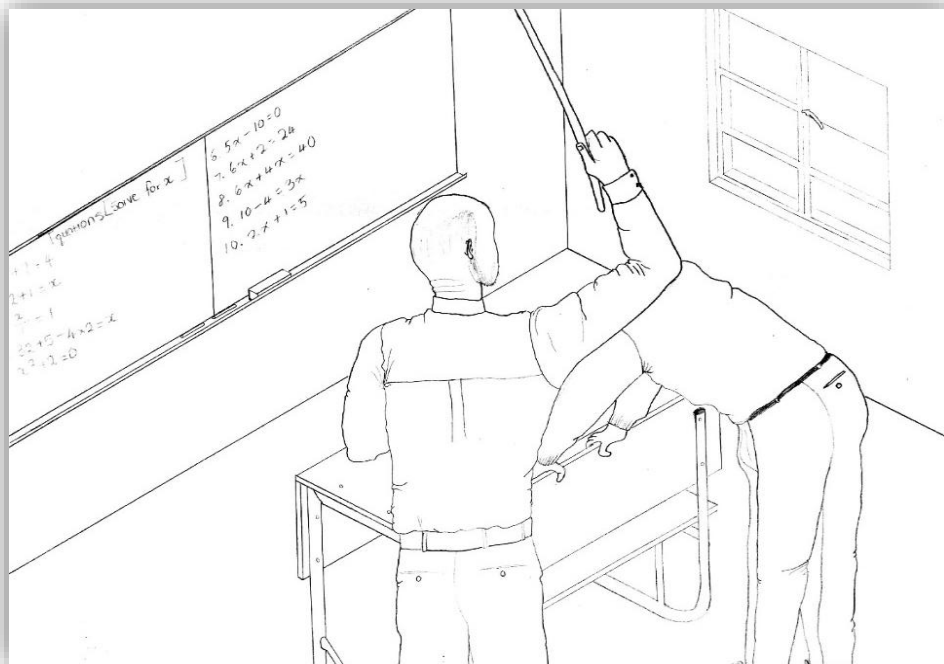


Figure 3.12: Memory drawing of my mathematics teacher caning a learner in school

This picture reminded me of how Mr Shoba (pseudonym), would punish us when his mathematics homework was not completed. He used to say when he was about to punish a learner, “you can’t dodge me if you dodge me you dodge yourself.” Hearing those words, the class knew something bad was about to happen. He would run to you like a bull terror chasing after your flesh. Then I would be holding onto my desk dear life waiting to get whipped on my behind. The mathematics

class was the most terrifying class. I was always petrified when it was time for the mathematics lesson in high school.

Mr Shoba did not apply suitable teaching approaches but he used a teacher-centred method only. His screaming and shouting scared me and I was always a nervous wreck with my eyes wide with fear. We were not given tasks where we worked in groups. His teaching destroyed my self-confidence, I was always afraid to make any effort in class, Thus, I ended up a passive learner and lacked all mathematical skills. He used the traditional teaching method where learners were given daily classwork and homework activities from the same old book he was using. These activities were done individually, the drill and practice method was the order of the day during our mathematics lesson. I was really struggling and Mr Shoba never noticed as he was concerned with only scribbling in the mathematics book. He became very violent if homework was not done, and would subject learners to five hard strokes on the behind. That, made my experience in high school worse as corporal punishment was the order of the day. He never bothered to ask or check if learners had any challenges with the topic or task given. What escalated the problem was the fact that I could not even report or explain my problem at home because beating will continue as the parents then believed that teachers were always right and had a right to discipline us. We were so scared of him because he was always shouting. His was voice was intimidating which led to my poor mathematics performance. I ended up being resentful towards mathematics and because of him, I dropped the subject in the following year and chose the general subject stream.

On the other hand, my needlework and clothing teacher (Mrs Shamase) (pseudonym) was very friendly to learners, passionate about her work and she was hardworking. She loved her subject so much that the love was automatically transferred to us as learners. As a result, when I was in high school, I aspired to be a teacher who would love her profession and the subject I would be teaching like Mrs Shamase. I was active during her lessons as she used the learner-centred method of teaching. I actively participating in class because needlework was interesting and fun to learn.



Figure 3.13: A memory drawing of my needlework and clothing teacher

Mrs Shamase (pseudonym), my needlework and clothing teacher, was diligent and zealous about teaching her subject. She once asked [us] the class to bring any old clothing, cotton and needles from home to use for our sewing practical lesson as the school lacked sewing resources for the subject therefore, we had to improvise for teaching and learning to take place. She would divide the class into random groups and select the learners who were good at needlework to teach others. I was one of the high flyers as I loved the subject needlework and clothing hence I was chosen as a peer tutor. She always motivated me to work hard and give off my best in life.

College experience - “Getting sharpened and shaped”

After passing my Senior Certificate (matriculation) examination, I decided to take a gap year but my mother disagreed with my decision. She asked me to consider studying rather than wasting time doing nothing. I opted for studying Technology in a Computer College as I had an interest in computers. Little did I know that this interest would further develop into a deep love of Technology. However, studying at this college was challenging as it was different from the school environment that I was accustomed to. The first major problem was the fact that teachers were either white or Indian and they would never have thought of simplifying their teaching strategies to accommodate a student who was not English speaking. They were aware that the language was a learning barrier to us but did nothing. They discriminated against myself and fellow black

learners, as they focused mainly on students from the other race groups in the class. Their teaching strategy did not cater for all learners and they were bias and prejudiced as they were not interested in my learning progress.

The second problem was the exposure to Technology subjects like typing and computers, it was a swim or sink situation. The lecturers were only facilitating the learning process. They delivered the lessons and gave tasks to be completed whether we understood or not. I was not coping with Miss Govender's (Pseudonym) teaching style. She was my Computer Studies lecturer whose motto was "I move with the movers." I was struggling and I was left to sink. As a result, I failed the first semester that year. After failing I decided to truant classes because I felt attending the Computer Studies class was a waste of my time. I eventually came to my senses and asked for assistance. I had to ask a fellow classmate to help me because I was lost and confused in that class and the lecturer was not prepared to help me. Being a student with a township background was not easy at all. At the end of the year, I passed with a National Diploma but that did not satisfy my passion for learning. I thereafter applied at a college of education in 1994 to study teaching and was accepted.

In 1995, I went to the college of education with lots of fears and a negative attitude that stemmed from the apartheid system and its Bantu Education laws. As a black student from a township disadvantaged school, I was fascinated and overwhelmed by the fact that I was studying in what used to be a predominantly white college. We were no longer racially segregated but learning in a racially inclusive system. It was my first time, setting foot into a lecture hall that had more than one floor. The first lecture theatre I went to was state of the art technology where we were gathered as first-year students. I was fascinated by the entire lecture room, it was huge with folding cinema chairs with a stage at the front, large screen that accommodated projecting to a very large audience and a podium with a small yet loud microphone and had an air conditioner.

The student residences were also a high point for me when I got a letter stating that I need to collect keys for my room at the ladies' residence. I was excited that I would be getting a space to myself. I was coming from sharing a four roomed house (matchbox) with seven or more people and I was in a boarding school where I the shared a dormitory with ten different girls. Here I was having a

whole room to myself. The room consisted of a single bed, carpet, built-in wardrobe to put my clothes in and a study desk. I was fascinated. My mother bought me all the necessities such as a radio, a black and white television set and my aunt gave me her favourite bedding she had just bought for herself but because her niece needed it she had no choice but to give me. As a result, I love my aunt dearly. She is my favourite person therefore the bedding was so sentimental to me.



Figure 3.14: A photograph of me in my room at the student residence.

The college life experience promoted and developed independency in me as I was responsible for my learning. There was no one to wake me up for classes, to remind me to study for the test, I was my own boss. There was nothing more exciting than having a set of keys to my residence room, after lectures, I looked forward to going to my room unlike other students who were travelling long distances. I saw that as a privilege.

The learning environment was totally different from what I was used to at the computer college and in the township school. The campus was beautiful and eye-catching with playgrounds for different sport codes, a swimming pool and the availability of teaching resources like computers and overhead projectors in every lecture room. The lecture room sizes were huge with a few students which was contrary to what I had experienced throughout my life. The institution had all the resources needed for learning and teaching which I found strange to accept considering my educational background from a township school. When I looked at how we were struggled to learn

due to inadequacy of resources, I become very despondent. Nevertheless, my love of technology was rekindled which was the reason I chose Computer Studies as my major subject.

The college learning was totally different from what I was used to. All lecturers used English as the medium of instructions. Even the vernacular language was taught in English. I discovered that tertiary learning was totally different from secondary learning in as far as the learning context was concerned. The multi-racial institutions had adequate resources for effective teaching and learning. At college, I had to learn to share spaces with people of other races as there was no longer racial segregation. We were treated equally and enjoyed the same benefits as all other students.

At college, learning was challenging and anxiety stemmed from the subject choices that I was expected to make especially mathematics. I had a challenge with numbers from my lower grades and because mathematics was a problem, I dropped it in high school. Suddenly I was expected to do Science subjects and Technology which I was not exposed. To my surprise, in my first year at college, I began to enjoy these Science subjects including Technology. Mathematics and Technology were designed in such a way that it aroused interest even to those with a negative attitude towards these subjects. Our mathematics lecturer made us understand that we learn at a different pace, some students take more time to grasp what was taught than others. Even though I was one of those students who was slower than my mates, I was delighted that I was actually these studying these modules.

The good thing was that my lecturer provided additional support and was very accommodating. With the provision of extra support, I was passing Mathematics and was enjoying it as compared to high school. Mathematics activities were designed to eliminate the resentment of the subject. They were activities such as tessellations and the strategies used by the lecturers were encouraging love towards the subjects. Tessellations are very effective in teaching and learning mathematics. They can be learned from nursery school to high school. Creating tessellations does not rely mainly on acquiring certain numerical skill therefore learners or students with many different levels of mathematical abilities can produce them. All students have the ability to create brilliant artwork and patterns with tessellations. At the college, they employed team teaching where we were lectured by different lecturers for different topics.

At the college I elected Computer Studies as one of my major subjects as I was at liberty to choose subjects I saw fit for my career destination. Learning the same curriculum with the students from different race groups was a huge transition on its own and a challenge at the beginning. For me, it was the first time I came across a large hall full of computers. Our schools were given subject streams that were divided into three categories; it was pure science which offered physical science and mathematics; a pure commercial subject which offered Accounting, Business Studies and Economics and then humanities referred to as a general category which included subjects such as geography and history. This kind of subject streaming limited our career choices. We could not spread our wings as wide as we wished. This was the driving force for me to enrol in Computer Studies to widen my horizons I chose Computer Studies to make sure that the children I will teach in the future did not experience the same hardship I went through by not fitting into the world of computer technology.



Figure 3.15: Metaphor of fridge depicting the computer laboratory

Figure 3.15 is a cold room which was used as a metaphor to paint a big picture of how cold the computer room was for me a black student, to learn in. This experience frustrated me and made learning very uncomfortable. The Computer Studies lecturer was similar to my high school mathematics teacher. The only difference was that there was no corporal punishment at the college. However, the computer laboratory was cold not only because of the air conditioners in the computer laboratory but because of the cold climate created by the lecturer who was facilitating the course. She had no interest in how students were coping with the subject. She did not care

whether you are falling off the wagon. She carried on with her lessons as if we all had prior computer knowledge and worst of all she spoke very softly. I could hardly hear her. I thought Computer Studies were fun and easy until I attended the classes. I felt like I was thrown in the deep end and was drowning. I began to regret my decision of choosing Computer Studies.

I was lost, frustrated and was not coping at all. The turnaround strategy that saved me was the ethic instilled by my grandmother of hardworking which came in handy during that trial period. I focused more on Computer Studies and tried to master the subject because without hard work and discipline, it was difficult to be on top of my game as a student. I thereafter decided to change my mind set and thought positively about the subject. I thought of strategies to make my learning work for me. I chose to organise myself and put more hours in, to make my studying experiences meaningful.

Furthermore, choosing Computer Studies as a major subject was the best decision, reflecting on how technology rules the world today. The biggest question is *“Who does not need technology these days?”* I am glad I made the right choice though it came with lots of challenges. Despite all the study hardships I experienced, I managed to perform well in my studies throughout the four years of training. During my final year I experienced a curriculum change when we were introduced to Outcomes-Based Education (OBE). There was not much of a change because the teaching styles used by our lecturers were not based on rote learning and teacher-tell method but was learner-centred. They facilitated through holistic teaching. There were academic activities as well as extra-curricular activities. We were taught to embrace the curriculum change and apply the new teaching approach which was Curriculum 2005 (C2005). In my fourth year and final year, I did exceptionally well and managed to obtain good results for Computer Studies.

Hard work paid off



Figure 3.16: A photograph of my graduation day at the College of Education

This photograph was taken at my graduation ceremony at the college of education Student Union Hall. This photograph reminded me of all the hard work I put in to become a qualified teacher. I was over-excited for making my dream of becoming a teacher true. My mother literally cried, not believing that she had brought up a professional teacher all by herself. This occasion brought both jubilation and sad memories recalling all the hardship and hurdles of the journey. I vowed to continue studying as reaping the fruits of hard work is so satisfying.

The next chapter of my journey was to look for a teaching job as a novice teacher so as to put into practice all that I was taught. I was looking forward to meeting learners and teachers as a qualified teacher, eager to impart knowledge to learners and achieve all goals set by the intended curriculum.

Work experience as a novice educator

My teaching career started after spending a whole year with no luck of finding a job. I was fortunate that I graduated from college at a time of transformation in the education system in South Africa. This transformation came with the change in the curriculum and introduction of new subjects such as Technology, Life Orientation, Arts and Culture and Economics and Management Sciences amongst others. The vacant teaching posts for these subjects was created. Fortunately, I had majored in

Computer Studies which was the requirement for teaching CAT. I applied for a post and was successful.

In 2000, I recall vividly the excitement in my family when I received a call from the principal stating that I was appointed as a permanent teacher, and he asked me to report at the school the next morning. I went to the school the next day. Luckily, I was born and bred in the township, so I did not need directions to the school, I arrived early before the school officially began. The receptionist showed me the principal's office and the male principal was expecting me and he greeted me with a big smile saying, "*Miss Cele welcome to your new home*" and gave me a handshake while handing over the appointment letter. I was excited and also nervous about what was expected of me by the principal.

The school principal gave me brief information about the school background and he said:

Our school starts learning at half past six in the morning and finishes at half past four in the afternoon that is how dedicated we are. We have maintained a good matric pass rate of ninety to a hundred percent over the past years. We are a secondary school in a disadvantaged community, surrounded by Reconstruction Development Programme (RDP) houses. The school starts from grade eight to grade twelve, with an enrolment of about 1200 African learners, with sixty to seventy learners in each class. The school has about twenty-seven classrooms and consist of fifty-five teachers, mostly females and very few males. The school management consists of [myself] the principal, two deputy principals and five heads of departments.



Figure 3.17: A photograph of myself as a novice teacher with my grade eight class

I was given my responsibilities by my HOD Mrs Shange (pseudonym). As a novice teacher, I was excited and worried at the same. I wondered if I would be a good or ineffective teacher to my learners. I worked very hard dealing with an overcrowded class of teenagers. With the help of my HOD, I managed to create a good rapport with my class. I would encourage them to make use of the morning study session and supervise them after school to make sure they were using the afternoon study session fruitfully. Mrs Shange helped me to adapt to the new environment with ease, though I needed to work on my self-confidence. As a novice teacher, teaching was not easy as there were lots of challenges of trying to adapt as there was not enough textbooks and lack of furniture in the classroom. Delivering a lesson and completing the lesson as planned was not easy in an overcrowded class. The school had only eight computers which were donated by a private company in an attempt to bridge the digital divide. The school did not have funds to buy new computers for the newly introduced subjects.

These few computers were also used for administration purposes which include preparing and processing of learners' reports. Only a few teachers knew how to operate the computer so I was expected to teach the fellow educators how to use the computer. Due to an insufficient number of computers, I ended up teaching technology in grade eight and nine (senior phase). I was faced with reality. It was time to implement the OBE C2005. I was excited to finally get the opportunity to put theory that I had learned at college into practice. Since I was familiar with OBE and C2005, fresh out of college, I was selected to facilitate workshops as one of the pioneers of the OBE curriculum in the Township District.

I was pleased with the fact that I was among the few people who were used as a vehicle to bring about transformation and development in the teaching and learning of South African learners. In 2001, I facilitated the training of Senior Phase teachers on OBE and C2005. This process equipped me with self-confidence in interacting with veteran teachers and with the implementation of the curriculum policies. One of the responsibilities I was tasked with was to unpack the new concept/terminologies of OBE which was a huge challenge for most of [us] teachers. I was tasked with designing activities to simplify the work for the teachers and engaged them in hands-on activities on how to design learning programmes. I recall leading the process of curriculum change, the training of teachers and facilitated OBE workshops in the Township district.



Figure 3.18: A photograph of me teaching in the Computer Laboratory

In 2006, a new subject called Computer Applications Technology (CAT) was introduced in an attempt to transform the computer studies curriculum in Further Education and Training (FET) Phase. I took advantage of the opportunity to move with the developments in computer technology teaching. I was also very fearful of not knowing what was expected of me as I was not given a chance to think about it but had to meet the expectations of the subject as per the curriculum. As a CAT teacher, one of my major responsibilities was to unpack the curriculum as a plan for teaching and learning (Khoza, 2015) I relied on the information I got from the workshops I attended for the content knowledge to teach this new subject. As a teacher, subject content knowledge plays a vital role in teaching the subject, Shulman (1987) claims that for a teacher to be effective he/she must be in command and have the know-how of the content knowledge for that particular subject.

One of the most crucial resources in the teaching and learning of CAT is computer competency and well-performing teachers for effective teaching. Boudersa (2016, p.15) affirms that “programs of teachers’ training and professional development are of central importance in any educational institution, be it in the primary, middle school, high school or even the university level.” Thus, there is a dire need for ongoing training of teachers in their areas of speciality for them to expand the subject matter in the classroom. Furthermore, Boudersa points out that “such programs will help teachers sharpen their teaching skills and deepen and improve their knowledge in the subject matter they teach, and thereby improve students’ learning and school education” (2016, p. 15). In order to have good content knowledge, the system dictates that the teacher must be well acquainted with knowledge and resources of which I still feel sceptical about in as far as my teaching experience is concerned.

For me, as a CAT teacher, the school has not been able to provide me with necessary resources such as computers, software and internet connectivity to help me to be well versed as there are no textbooks, so I am lacking in my teaching practice. In ensuring that I acquire the content knowledge, I depended mostly on workshops which were dedicated to assisting teachers with content delivery in the classroom. I decided on attending as many workshops as I could as well as furthering my studies in an attempt to improve my teaching practice. I still feel that I lack in terms of subject content delivery due to teaching in an under-resourced school. Workshops are offered by the Department of Basic Education to solve problems encountered by teachers in classrooms. However, for me they are not completely addressing the problem I have with my teaching practice as the other contributory factor is the insufficiency of teaching and learning resources.



Figure 3.19: A screenshot of my Facebook post

This photograph was taken at a workshop where we learned how to integrate iPad tablets as a teaching tool in the classroom. Such workshops provided me with relevant information and tools that I could use in the classroom to integrate the use of technology in my classroom. Even though these workshops equipped me in terms of technology, my learning and teaching context differed vastly from the other teachers at the workshop. The training was delivered in a one size fits all mode. Our individual contexts were not considered especially mine in an under resourced school. This made me aware that is important to understand the context of learning before teaching.

The contextual knowledge plays an important role in applying different teaching strategies, thus, content knowledge is dependent on contextual knowledge. Teacher contextual knowledge of learners is crucial as it informs the tasks give to learners and teaching strategies employed to teach learners (Mavuru, 2018). Teaching CAT in an under-resourced school, I have learned and understood my teaching environment. For example, I am not at liberty to give homework to my learners every day since they do not have computers at home. We are living in a digital era but accessing information at my school is still a mission impossible. I still cannot email notes and other learning material; therefore, I have to resort to making use of the photocopying machines to produce hard copies. I am then compelled to plan my lessons according to what resources are available to assist me in delivering the enacted curriculum. Teaching is not only academically bound, but extra-curricular activities also contribute to teaching learners holistically.



Figure 3.20: A photograph of my Zulu dance group in Leeds, United Kingdom

I voluntarily created an Ingoma Zulu dancing group where I actively participated in extracurricular activities. Ingoma Zulu dancing is a traditional form of dancing that is still a dominant form of entertainment in any Zulu culture. The group consisted of twenty grade eight boys and girls who were passionate about Ingoma dancing. I used the afternoon study periods to practice outside the classroom.

This photograph above is of my learners who were selected to go and perform in Leeds in the United Kingdom in 2002. We were nominated as a South African school to perform in the Leeds Breeze festival that is dedicated to the youth development in the United Kingdom. All trip expenses were funded by the eThekweni municipality. This was an opportunity of a lifetime for both myself and the learners. The principle I apply with my learners is “to give your best in everything you do as it bears rewards in your future.” When I started this group, I had not intended for any reward, I did it out of love and it afforded me great things.

Apart from my usual teaching responsibilities, I was entrusted with planning and organising educational excursions and entertainment events. I am very adept at raising funds for the school and I was very interested in raising funds to improve the computer room at my school. I still remember the first school trip I organised in 2001. We visited the Durban science and Kwamuhle museums. All the money raised from that trip bought data projectors and printers to promote teaching and learning. All the dedication and hard work did not go unnoticed and it paid off as I got promoted to a senior position at school.

In 2007, I was promoted as acting HOD to lead the Department of Technology at my school, I am in charge of supporting and monitoring eight teachers with an enrolment of 1500 learners in both the GET and FET phases. My other responsibility was monitoring and managing teachers’ work and work done by learners to check if the intended curriculum was effectively implemented. I also encourage them to develop themselves through furthering their studies to promote professional growth. I have to supervise the curriculum implementation with a clear understanding so as to provide appropriate guidance. My engagement with the curriculum played a vital role in the evaluation of the curriculum. As I am expected to have a better understanding of the curriculum,

which is also the reason behind the furthering of my studies in the Curriculum Development discipline. The promotion came with more responsibilities but it was not a big problem because I am used to working under pressure.

When I recall how my grandmother delegated work, making sure that as a girl child, I was always occupied with something to do. The personal history helped me see that hard-working skills could assist me in engaging all my learners with more activities to improve their skills. This would also assist me in completing my annual teaching plan on time. Reflecting on the skills I acquired at an early age, now play a significant role in my teaching practice as an educator and also a Technology HOD at my school, I am able to lead my department by example. My work is always in order and well-organised but I still struggle with meeting deadlines. I need to get used to delegating work to fellow colleagues within my department.

My journey to revisiting and examining my past made me realise that the principles and morals that were instilled in me as a child have affirmed my decision of becoming a teacher. Being always busy with household chores and the ability to recycle, I learned to create something out of papers and plastics and this taught me to improvise. This allowed me an opportunity to display a sense of creativity both at school and at home. These qualities, I treasure as a teacher and as a mother, I am always conscious of these experiences that shaped and helped me in executing my work especially when I am designing my lesson plans and projects. Hard work, responsibility and creativity played a huge role in developing the teacher that I have become. The aforementioned traits came into good use in my adjustment to the ever-changing education curriculum. Therefore, as a HOD, it is important for me to be in line with the curriculum changes to be able to encourage the fellow colleagues to reflect upon what the enacted curriculum requires. As there is no one size fits all with the curriculum, to successfully implement the curriculum, the teacher has to be dynamic in the teaching approaches applied.

Conclusion

In this chapter, I narrated memories of my learning and teaching of CAT experiences, starting from my primary socialisation up to where I am currently. In discussing my personal history narrative, I used multiple self-study practices such as artefact retrieval, photographs, memory drawing and collage making to evoke memories from my past. The use of photographs made me aware of the significant role played by my grandmother and mother in developing love and a hardworking ethic in order to promote personal as well as professional growth. I also recalled how I used a cold room as a metaphor that represented my college Computer Studies learning experiences. The lecturer literally and figuratively created a cold learning climate for students like me who had difficulties grasping the concepts in Computer Studies. She left me and others in a cold and dark place when she paid more attention to those who understood her. These unpleasant memories motivated me to become a teacher who was different from these teachers.

I undertook the journey down memory lane and it helped me revisit the pleasant and unpleasant events of my educational experiences. To respond to my first research question: *What can I learn about my CAT teaching practice in an under-resourced school*, I drew on personal history and the art-based self-study methods where I generated data through journal writing, photographs, metaphor and collage making. As Samaras (2011) suggest, there are various and diverse self – study methods that have been developed for self-study researchers. I intended to learn from my past experiences in order to develop new innovative teaching strategies to help improve my CAT teaching practice. Recalling these unpleasant memories made me become aware of how learners can be frustrated by the teacher’s attitude and teaching strategies employed. Varathaiah (2010) points out that the attitude portrayed by teachers to learners may hinder the learning process. Therefore, as a teacher I should consider that learners learning is unique, therefore I should apply different strategies that would make sure that learners are actively involved. I figured out that the learning environment also plays a crucial role in encouraging or discouraging learning.

In the next chapter, chapter four, I discuss how I engaged my participants in helping me respond to my second question: *How can I improve my CAT teaching practice in an under-resourced school?*

CHAPTER FOUR

THE GOOD, THE BAD AND THE UNPLEASANT

Introduction

The focus of my self-study was on teaching CAT in an under-resourced school. The main aim of this study was to assist me as a CAT teacher to improve my teaching practice in an under-resourced school. The purpose of this personal history self-study was to explore strategies to improve my teaching practice of CAT. I have used a personal history self-study methodology because it focuses on studying oneself by reconceptualising significant events from one's past and understanding them for the improvement of one's teaching practice (Samaras, Hicks & Berger, 2004).

In the previous chapter (Chapter Three), I responded to my first research question: *“What can I learn from my personal history about teaching CAT in an under-resourced school?”* I revisited my primary school experiences, followed by my high school journey and then my tertiary level education. Lastly, I delved into my experiences as a novice teacher focusing on how my exposure to technology as a child at home and a learner at school influenced my development as a CAT teacher. I drew on lessons about my learning in an environment with limited learning resources. My personal history narrative in the previous chapter represented different phases of my learning through different self-study practices such as collage, memory drawings, artifacts, and journal writing.

In this chapter (Chapter Four), I narrated how I engaged my participants to help me respond to my second research question, *“How can I improve my practice of teaching CAT in an under-resourced school.”* For this study, I had organised discussions where I engaged with participants and employed different self-study activities as triggers such as photos and a stiffy disk to stir memories about my experiences. These discussions were to help me learn about my CAT teaching practice in a school with limited teaching resources. All the discussions took place at different venues within the school premises. I used the audio recorder to record all my discussions and activities with my participants. As the main participant, I decided to use a reflective journal to reflect on each discussion I had with participants. In narrating how these discussions transpired, I also presented my thoughts and feelings about the memories that were triggered. I included photographs and images of objects used during the discussions. I gave pseudonyms when referring

to participants for confidentiality. If a direct quotation from the participants was made in isiZulu, I translated them into English to make sure what the participants was meaningful and the tone of the message came across clearly.

Getting a bigger picture

Personal history self-study also depends on working with others in narrating the lived experiences of the main participants (Samaras et al., 2004). Hence, in this research, I also engaged participants who were meant to represent different phases of my life experiences, starting from friendships while learning in high school, college mate and a former CAT learner from the school where I teach. I selected participants who formed an integral part of my professional life and shared the walk with me in one way or the other. I needed them to help me narrate my lived experiences as they happened (Samaras et al., 2004). I felt they would help fill some of the gaps and add to my journey down memory lane as I reminisced about the good, the bad, and the unpleasant past experiences of my learning and teaching of CAT.

For purpose of this study, I worked with three participants, as shared in chapter two that had a significant role concerning the valuable and meaningful experiences of my learning and teaching journey. These three participants represented my school community members (learner, teacher and school management). As Banks et al. (2001) emphasised, we must learn about our past with our schoolteachers. As elaborated in Chapter Two, I held conversations with participants Mrs Shange (Deputy Principal), Miss Dweba (friend and a colleague) and Vukile (former CAT learner).

Meeting with my participants

For our meetings as indicated in Chapter Two, I chose to use different locations within the school premises, where I intended to spend an hour with each participant. However, when the conversation extended beyond the set time, I allowed it as long as everyone was comfortable. I wanted to make sure they did not have a running train experience. I used the Consumer Studies laboratory for the first group meeting, as it was spacious and warm. We discussed and agreed on meeting at different venues where participants were comfortable to meet with me within the school premises. For the individual sessions, the meeting with deputy principal took place in her

department offices. My office was also used to meet the teacher/friend and lastly the computer lab was used to meet with the former CAT learner.

Introductory meeting with all participants

On this day, I welcomed the participants as they came in to join the meeting. We all sat at the big table, and my former CAT learner sat at the learner's desk. I noticed he was afraid to sit next to his former teachers as he regarded us as adults. According to my Zulu culture, a child does not sit at the table and talk with adults, not unless the adult requests it. It is regarded as a sign of respect. Thus, I explained that we were not his former teachers anymore but colleagues who were meeting for a common purpose in this gathering. I made sure that in saying this, I kept the conversation light and comfortable. I was happy when the other participants echoed my sentiments, and we laughed about it as he joined us at the table. Upon reflection, I realised that holding separate individual meetings was the best decision that I made. His actions showed me that my group's power dynamics would have been problematic had we all met together for conversations.

When we all were seated and the initial greetings and small talks were done, I then handed out the agenda for the meeting to all the participants.

Time	Item	Action
15h05	Welcome Note	Researcher
15h15	Purpose of the meeting	Researcher
15h30	Background of the study	Researcher
16h00	Discussion on the next date and <u>venue</u>	ALL
16h15	Meeting adjourned	Research

Figure 4.1: The copy of the agenda of the meeting

Having an agenda ensured that I made them feel important and thus required a professional and respectful approach. The meeting was conducted in both English and isiZulu to make everyone feel comfortable to express themselves. I started by formally greeting them, then introduced myself as a researcher and a CAT teacher. I began by giving them my background about my love for technology.

Immediately after the agenda discussion, I explained the rationale behind the study, which was based on my frustrations with teaching CAT in an under-resourced school. Since I have taught CAT for fourteen years, the quality of CAT results has not improved; they remained average. This can be attributed to the fact that the teaching materials and equipment I used to teach CAT were inadequate, obsolete, and dilapidated which made it difficult for me to produce competent computer literate learners.

I explained that the study would help me improve my intentions for CAT, which was developing my learners to enjoy and pass the subject. I decided to further my studies and conduct this research focusing on "Teaching CAT in an under-resourced school" to look into my practice to improve my teaching practice.

After my explanation, I then asked the participants if they had any questions for me. One of the participants asked, "I hope our identities would not appear in the thesis." I assured them that confidentiality would be maintained as I would be using pseudonyms to protect their identities. As Samaras (2011) pointed out, participants need to be protected and aware of their rights in self-study research.

After the discussion, I then explained how we would work together, stating the activities we were going to do with each participant. I explained that we would also use artefacts such as photographs and old floppy disks to retrieve my teaching and learning memories. I asked them to decide on dates that would suit them as far as our meeting times were concerned. I told them that they should feel free to discuss or ask anything they needed clarity on for instance, they may call me before a meeting if there is a need. After the meeting, I reflected on how the discussion unfolded:

I am happy with how the meeting unfolded. I was expecting more questions from the participants, but it seemed they were happy with my explanations. Meeting with all the participants helped me understand that it would have been impossible to meet as a group for all the sessions. The learner

participant was reserved and felt shy to participate in the activity amongst his teachers. I was glad to see how my other participants responded to the issue and making him welcome, and I wished all of them felt the same way. (Personal Journal entry, August 2019)

Meeting with Mrs Shange, my deputy principal

As indicated above, this was the second meeting. I asked Mam, whom I usually call Mrs Shange if she did not mind having the meeting in her office. I preferred her office because it was at the far end of the administration block, which meant we were away from the noise and disturbance. We met during the afternoon study session when we had no classes to attend to. I showed her two photographs that I brought with me to get us talking. The photographs were intended to help her remember the good, bad, and even unpleasant memories of my school teaching. As Mitchell (2011) posits, working with visuals provides an opportunity to trigger significant participants' memories.



Figure 4.2: Photographs shared with Mrs Shange during our conversation

As soon as her eyes locked on the photographs, she smiled and commented on how young a teacher I was when I came to the school. She said the first photograph reminded her of a young, vibrant teacher she mentored to becoming a supervisor herself [HoD]. She mentioned that “*You portrayed leadership qualities from the get-go as you used to enquire at all times if you are doing your work correctly.*” She also stated that “*You were good in the classroom, organised, and you learned to*

deal with the large crowded classes.” She continued to emphasise that “I remember in the beginning, how massive of a challenge it was for you to make the CAT laboratory a productive environment with limited resources. However, this reminds me how easily frustrated you became when you learned the reality that there were insufficient teaching resources at school.”

I recalled that the most frustrating thing I faced in my teaching practice which is still a big challenge, is the lack of internet access in the computer laboratory. The internet is a teaching resource when teaching CAT, and it is the most vital tool responsible for effective teaching and learning and also for communication with a subject advisor via email and skype, distribution of teaching materials such as CAPS documents, ATP and circulars, learning resources for both learners and teachers, for example videos and PowerPoint presentations (slides), tests and examination question papers as they are sent to schools in an electronic format. Thus, I could not adequately cover the network and internet chapter with the computer laboratory's lack of an internet connection. Consequently, it affected the curriculum coverage and the enacted curriculum was not effectively implemented. To date, teaching the internet is still tricky as my learners cannot access the internet for practice. I am only able to teach the theory part of this concept. As a result, I wrote two letters, one to the principal and the other to the School Governing Body (SGB) complaining about the state of the computer laboratory.

The response I received from the letter I sent to the school stakeholders was negative as it made me realise that they were not people to help regarding computer resources. My principal clearly stated that there are no funds to support CAT as it serves a tiny portion of the school population, the subject was given the least school priority regarding funds allocation. The photograph brought to mind an incident where I came to her office complaining of the shortage of books and complained that the photocopier was not working. She laughingly recalled seeing the confusion in my eyes as she told me that learners shared books in threes. I remembered how I struggled to teach learners sharing books in threes. I remember I asked to have a subject meeting with her where she requested Mrs. Shange, as my then HoD, to write a letter to CAT learners’ parents to seek assistance. As I was granted permission, I stated in the letter, the challenges I was facing in class regarding the shortage of textbooks and revision books, especially during the revision period where I needed to work with as many question papers as possible. I, therefore, requested parents to purchase a ream of duplicating papers for each learner to bring to school. Even though I knew the

outcome would not be the one I was expecting due to the nature of the community I was serving, most parents relied on the grant from the government for survival. I opted to duplicate copies rather than sharing and was able to conduct my lessons. Then the subsequent resolution to my challenge was embarking on fundraising strategies for example, I managed to organise an excursion to the Royal Showgrounds which brought in enough money to purchase a data projector and a printer from my first fundraising project. I used events like Valentine's Day, Mother's day, and Father's day to raise funds. We both laughed at the matter as I remembered that incident, but at that time, I was frustrated and did not understand how I was expected to teach.

For a moment, she was quiet, and the next thing she was laughing, and I asked her to share the joke. She said in a sad tone, "*yakhumbula abafundi bakho be CAT bebuka imiphumela yesikole batshela nabanye abafundi abangayenzi iCAT ukuthi baphasile noma bafeyilile*" which translated "Do you remember when your CAT learners viewed the results from the computers that were used by teachers to compile schedules and informed other learners if they have passed or failed?" I replied that it was the day I will never forget in my life as it was the first time the principal called me to his office for what was believed to be misconduct on my part. Luckily, the principal called the learners to investigate, and they explained how they had fooled me into not seeing what they were up to while I was teaching them.

Mrs Shange said: "*I was happy that this incident taught you a lesson not to trust learners as you were too trusting, and the fact that they had learned to work with different screens and tricked you as their CAT teacher.*"

Even though I was somehow disappointed that my learners inappropriately used their acquired computer skills to engage in dishonest behaviour, I was happy that they acquired some computer knowledge and mastered how to perform computer tasks such as filtering and sorting results using excel application software individually without any assistance.

The second picture she picked was the one where I am teaching a CAT class. She told me that: "*When I recalled your first lesson preparation, you submitted a file with a detailed lesson plan which was new to me as an old teacher as we were still using the old school method using scheme books. You brought in a spectrum of new ideas of how a lesson is broken down in-depth. You were making sure that you actively engaged learners in your teaching and in doing technology projects.*" Such statements reminded me of how we were taught at college; in as much as my

computer lecturer's pedagogy was not good for me, but there was also a bit of good that came out of that misery as she provided us with helpful knowledge such as designing a detailed lesson plan and introducing us to portfolios instead of scheme books as she expected us to submit a portfolio with lesson plans and teaching aids after teaching practice. This experience prepared me well with the skill to design a teaching programme for my teaching practice.

She shared that she also remembered my first year teaching CAT to grade 12E. She highlighted:

“You opened with your grade 12 learners a week earlier than the official opening of school from the summer holiday. That showed maturity and readiness to face the mammoth task of teaching CAT to grade 12s. You took your teaching of CAT seriously, and you were aware of the responsibility on your shoulder. However I would like you to work on pacing yourself, learn to be in line with ATP time frames so that you complete the curriculum on time.”

My discussion with Mrs Shange brought back the hardship and challenges that I went through as a CAT teacher. In our discussion, I shared how I battled as a novice to deliver the lesson using the chalkboard instead of a data projector. Teaching practical lessons like word processing concepts requires displaying to learners how to format a paragraph or insert an object like a square shape or using SmartArt on the computer was a mission impossible. I would try to reach every learner's computer to demonstrate what they were expected to do. I realised its impact on time management, as I struggled due to the inadequacy of time as an essential teaching resource. As she responded to our engagement, Mrs Shange expressed how she did not know the depth of my challenges such that it also involved the actual teaching part of it in terms of content. Hence, my request for another teacher to help me and my inability to complete teaching on time was a surprise to her.

She reminded me of another incident when I came to her office and politely requested if I could invite another CAT teacher from a neighbouring school to come and help my learners with his excellent expertise. This decision came about after I realised that all my CAT learners performed poorly in an excel question. However, I made sure I thoroughly prepared myself when teaching that particular section. However, the results reflected that I decided to seek help from a colleague who was a CAT and mathematics teacher. I had to accept that I was struggling with excel since it involves performing calculations, and I have a challenge when it comes to manipulating numbers. He taught me that I needed first to introduce a problem to be calculated on the chalkboard before introducing the function to perform the same calculation. For example, to teach learners to

calculate average. I should allow the learners to first find the total of the values given: Example: $23+16+45+39+40+20 = 183$ then divide that total by the number of those values in the set to get the average: Example: $183/6 = 30.5$. Once all learners obtain the correct answer, then introduce them to the computer functions such average, sum, mean etc. On the computer, learners needed to key in the correct formula using the suitable function and then select the range which is the column of the given values to find average and then the computer performs calculations automatically, for example=Average (range).

Through this discussion, I realised that organising another teacher who is an expert in another field benefits learners as they learned a new innovative teaching method to approach excel calculations (Eisner, 2002).

After this session, I later reflected on our conversation:

Engaging in discussion with Mrs Shange made me realise how the inadequacy of resources such as time negatively affected the implementation of the CAT curriculum as I was at times forced to skip some of the sections where I ran out of options. Our discussion made me aware that I do not need to rely only on physical teaching material such as the internet and books; instead, organising other teachers for team teaching may yield good results. I learned to tackle my challenges head-on as it helped me develop my teaching strategy and increased my self-confidence towards teaching excel.” (Personal Journal entry, August 2019)

Meeting with Miss Dweba, a colleague and former college friend.

Miss Dweba is the second person I met, and we met in my office, where we usually have our subject meeting since we both teach CAT in the school. As soon as we sat down, I brought out an old stiffy disk to be used as an artifact. Upon seeing the disk, she started laughing as she picked it up, asking, "*Umvusaphi lo?*" meaning "where did you find this one?" I was happy with her reaction as I intended to evoke it as part of our remembering as we connected with the artifact.



Figure 4.3: A photograph of an old stiffy disk I used at college to save my computer work

Miss Dweba continued after seeing the old stiffy I had in my hands screaming, "*Hayi-bo girl ungangikhumbuzi izinsuku ezimbi ze computer ekolishi*" translated. "Ooh, no girl, please do not remind me of the bad computer days at college."

With a smile, I added, the good days of Wet Wet Wet; this was the Rock band that was always playing in the computer room background. The music made our stay in that room more bearable.

She agreed as she described the learning experience in the computer lab:

"Gogo made the learning experience in that place a living hell; the conditions were terrible as she was a mean, cold, and not approachable lecturer. She appeared to have no interest in students who lacked a computer background knowledge."

In our discussion, we agreed that our computer lecturer's teaching approach was inappropriate. It did not accommodate learners who did not have any computer background, such as knowing the types and functions of a computer. *"Remember how it was our first experience, but we were treated the same with students who had computer knowledge. On the other hand, we were never exposed to computers in high school. Hence we were clueless in computer class."* Ooh, yes, I remembered how she never even allowed us to talk and help each other. Our discussion revealed that it was our first experience with computers, but we were treated the same way as students who learned computers in high school. We then spoke about how we struggled to find our way with the challenges we had, such as not knowing how to log on and shut down the computer as we had not learned about computers at home or school.

There was no emphasis on the importance of saving work regularly, and we learned the hard way. It made me remember an incident that I shared with Miss Dweba, this was where I was writing a test, and I thought I had saved my work on the stiffy disk. To my surprise, my work was not on the disk as I did not save it and was awarded a zero for that test as there was nothing to mark. Maybe that is why I always tell my learners not to forget to save, and my learners even say it with me, and we both laugh. Over the years, I have also observed you teaching; you are different; you always seem to care and you are always there for your learners.

“Hey, Oh, boy! Oh boy,” She exclaimed as she recalled something, *“I am reminded of the day Gogo, [which is the name we gave to our computer lecturer because she was a bit old], gave us our year mark. Immediately after you opened that tiny folded piece of paper, you were traumatised, and the smile faded from your face. I noticed tears falling from your cheeks. I was sure you obtained a low-year mark which meant you got below fifty percent. To my surprise, when we went to see you after lecturers in your room that you did not fail the year mark, you were disappointed in yourself.”*

Recalling that incident, I remembered how close I was to failing the semester. I informed Miss Dweba of how frustrated and disappointed I was at the marks printed on a bit of paper.

She explained: *“I was always amazed by the love you seem to possess for computer studies and how much you fought to do well in the course. I have observed how you always tried to transfer the same energy and love for computers to your CAT learners, even as a teacher.”*

From Miss Dweba's comment, I gained insight into how I became self-motivated as a computer student.

In our discussion, we admitted that even though our lecturer was stiff and unapproachable, having all the necessary resources, made spending time in the LAN bearable. Moreover, little did we know what awaited us in schools. The school environment is different from what we were used to—challenges of teaching with insufficient computers and no internet connection.

Thus we were able to help each other after classes without Ugogo's assistance. She would stand in front of the big computer class and speak softly, and I would not hear or understand what she was teaching. She would stand still and bore us to death with the same teacher tell method. We were never actively engaged in the lesson, and we were not used to learning in English.

In the middle of our discussion, Miss Dweba asked me a question: "*are you aware that learners are scared of you? As a result, others are scared to choose CAT in grade 10, as they feel scared and think you are very strict and harsh. Her comment reminded me of my personal history shared in Chapter three that my voice is commanding in nature, and therefore I must be friendly but still be firm as a teacher.*

This revelation reminded me that I needed to improve my communication skills with learners, especially CAT learners.

I need to realise that I also need to improve communication skills with learners to make them feel comfortable about choosing CAT as a subject in grade 10.

She further illustrated how I would exhaust different avenues by negotiating with the other colleagues to bring in your Wi-Fi to connect all.

"I remember you asked me to come along and help you in helping learners access the internet and create their email addresses."

We giggled at the chaos that was there on that particular day. On a serious note, she shouted,

"You went all out to achieve the goal of teaching the learners a skill they will need even outside school. She added that they could send each other emails when you paired the learners, and the lesson became a success. When you were on long sick leave and no one was appointed to replace you, I was one of the teachers who monitored them. During your CAT periods, your learners were always busy helping each other master certain concepts. They worked in pairs mentoring and correcting each other's work. The peer-tutoring you introduced seems to help them revise what they were taught while you were in the hospital."

I was aware that you and other teachers did come because my student informed me on WhatsApp that you monitored them.

We ended the session with Miss Dweba; I reflected on how our conversation went:

Meeting with Miss Dweba helped me relive and re-examine my college learning and my CAT teaching experiences. She reminded me of how a computer lecturer taught us to apply a teacher to tell the teaching method, which kept us passive all the time. Her teaching that did

not accommodate all students and she would move with the high flyers, and we would be left behind. (Personal Journal entry, August 2019)

I learned that I should actively engage learners throughout the lesson. Creating a warm learning environment is essential in the CAT class by communicating with them and minding my tone, especially since teaching and learning resources are insufficient.

During the discussions with my participants and sharing ideas and suggestions, I identified my teaching style as one of the hindrances in teaching CAT effectively in an under-resourced school. I found some suitable suggestions that could help me improve my CAT teaching practice in an under-resourced school.

Meeting with Vukile, my former CAT learner



Figure 4.4: A photograph of the computer laboratory where Vukile used to learn CAT

My meeting with Vukile was in the Computer Laboratory, and I decided to use the same venue as it was where our teacher-learner relationship developed. He and I shared many years in that laboratory accumulating significant memories of the experience, and those were memories I wished to evoke. As soon as he walked into the computer lab, he started talking about how he missed spending quality time with his PAT (Practical Assessment Task) project in that place. He reminisced about how he was reminded of the old computers with bulky size monitors, making it difficult to see the person sitting in front of you. We laughed at those immediate memories, which propelled us towards our conversation. He shared how he missed their mischievous behaviour at times:

“We used to hide what we were doing as it was difficult for you to view what was displayed. We also played games during the lesson, and we knew that you would not see us.” I then reminded him of the incident where you shared the school schedule, and I explained that I shared this with Mrs Shange.

He reflected on that incident:

“We felt terrible about how we wrongly used the skill you taught us; hence, we decided to buy you a kettle to apologize for our wrongdoing as a class.”

I also responded that teaching them was challenging but exciting as they were a group of active learners.

He continued explaining:

“Ooh, how I missed the good old days where you would sit at the back row of the computer lab marking our PAT.³ Moreover, calling us individually to perform an activity when you felt we copied from each other.”

I realised that sitting at the back of the class allowed me to observe all learners and see all their screens to know what they were doing. I learned a lesson from what they did viewing the school results. When sitting behind the class, I could have a one-on-one engagement attending to individual queries, especially those struggling, without disturbing the entire class.

He also highlighted that

“We hated how you delayed returning our tasks for the feedback though we knew how thorough you were. When assessing our work, you remembered the work you have marked already, and it made us scared of plagiarising as we knew you would catch us if we did not use citation as you have taught us. As you always found something positive to comment based on how learners responded to a question and made sure you ask a follow up question in case of incomplete answers.”

³ PAT is a Practical Assessment Task, a research project done individually by CAT learners where they are given a topic to research. Learners are expected to find data, analyse, process and present it as helpful information.

Whenever I noticed any sign of copying, I called the culprits to find out what happened or why their work was similar, and they would share the mark. If it was a test, I would give them another test.

In our discussion with Vukile, I gained insight and became aware of my marking weakness, and this informed me of learners' eagerness to get timely feedback from their teacher. Receiving this form of response touched me and made me take a deep look and reflect on my teaching pedagogy, intending to improve my teaching to help my learners' learning. To me, this was an indication that I needed to improve my marking strategy. I should embark on marking and returning learner's work as soon as possible to allow learners to see where they need to improve. He also shared another memory of having to attend CAT extra classes, which happened on Saturday.

Vukile's description of attending CAT extra classes:

"It was frustrating and challenging activity, coming to this place [computer lab] for extra classes on weekends especially. On weekends, weekends meant having time; however, we soon realised how these Saturday classes helped us complete PAT as we had limited time to learn during CAT periods as we were sharing computers. I remember you brought your Wi-Fi router to help us connect and access the internet to search for information to do our PAT."

Little did Vukile know how financially draining it was as I had to buy data from my pocket to assist them? He expressed how honoured he felt and believed that he would not have completed PAT if it was not for the extra classes I provided them.

I reflected on the conversation we had with Vukile

O' Lord, If only Vukile knew that working after hours deserting my children was not easy. When other teachers were long gone to the comfort of their homes, whatever I was doing was for their benefit to improve their performance. I was sacrificing my family time for them. I was not getting a penny extra towards my salary. (Personal Journal entry, September 2019)

This reflection reminded me of how frustrated I was by the learners' hostile attitude, which sometimes affected me. I remember one of the Friday afternoons when I was marking the attendance register. I was shocked to realise that quarter of the learners did not show up for the

lesson. I was disappointed and discouraged. However, I had to remind myself of my duties and work with those present learners.

In our discussion with Vukile, we spoke about the chaotic behaviour they demonstrated when surfing the internet, as they were over-excited about getting the opportunity to access the internet. I made sure that I set the record straight that they only had to visit the suggested websites which contained the needed information; otherwise, the offer would be denied. As each learner would take turns searching the internet, others would be helping and guiding the one who was searching the internet. Hence I organised activities in such a way that benefited all learners, even the weaker learners. I grouped learners who are high flyers with the weak learners— given many CAT learners in my class against the limited number of computers and the limited amount of time for CAT lessons. There was insufficient time for each learner to have a turn to work on the computer.

I asked him how he perceived my teaching as a learner back then. He responded by saying that *"even though working in groups worked, but most of the time. As a result, the bullies did not bother to contribute, and they relied on us to do."*

I was worried, and I asked how come no one reported the matter? He jokingly said that *"was how we were buying our protection in the school premises."*

It also distracted learners who were active and willing to learn. When I decided to divide learners into groups, I thought it would allow learners to work together and share ideas. Vukile continued reminding me about video projector memories.

He elaborated that *"using the video projector allowed us to watch videos in class that somehow made a bit of a difference in terms of understanding new concepts although the language was a big issue as they were recorded in English."*

He clarified that they would struggle to keep up with the voice in the video.

"However, the videos allowed them an opportunity to see what devices looked like and how other technologies worked."

Vukile also reminded me of when I was admitted to the hospital and could not be in school. *"We became worried because it was towards exams, and we did not want to lose learning time. We*

were relieved when you requested permission to gather our parents' cell phone numbers to create a WhatsApp group. That WhatsApp group helped us to catch up with the learning.”

I responded to Vukile that I felt the use of WhatsApp technology would help me continue teaching the program's theory content as I was lagging behind in my teaching as I was booked off sick for a long duration. Hence I had to request the parents to allow them to use any phone available at home to engage with me on WhatsApp for teaching and learning only. I used the WhatsApp application to teach my CAT theory lessons to them while I was at home recovering.

I explained to him that I thought of WhatsApp Instant Messenger because it is a cheaper means of communication and has features, which could be used to teach and learn CAT. I hoped that involving parents would get them to understand the demands of the subject. I was also sending notes and worksheets to their cell phones, and they supported the initiative that I took to make sure that the learners did not miss the CAT lessons due to my absence.

He continued to express his experiences by saying, *“the WhatsApp group also helped us communicate with you when we needed help even when we were studying for our final practical examination. You responded to every person who was struggling”*.

The meeting ended on a high note from taking the journey to my past with Vukile. I appreciated him for taking his time to have this conversation with me.

Conclusion

In this chapter, Chapter Four, I elaborated on how I involved my participants. They were my former Deputy Principal, my fellow CAT teacher, and former CAT learner to help me respond to the second research question of my self-study: *How can I improve my teaching practice? CAT in an under-resourced school*". I gave a detailed account based on my learning through engagement with my participants. Engaging in collaboration with my deputy principal, my former college mate, friend, and former CAT learner, I became aware of the fundamental implications of teaching CAT in an under-resourced school.

In the next chapter, Chapter Five, I provide a detailed illustration of my learning through a collage to consolidate my learnings. Also, I give a review of my personal history self-study research. I further describe how this study has influenced me personally and professionally. Lastly, I deliberate what I will like to investigate in my future research.

CHAPTER FIVE

REFLECTING ON MY RESEARCH END OF THE JOURNEY

Introduction

The purpose of my personal history self-study was to explore different ways of improving my CAT teaching practice in an under-resourced school. I anticipated that improving my teaching practice could create a conducive learning environment for CAT learning and improve learners' performance. My past learning experiences influenced the focus of my study in looking at these past experiences.

In the previous chapter, Chapter Four, I responded to my second research question: *How can I improve my CAT teaching in an under-resourced school*. I outlined how I engaged in collaboration with my colleagues and my former CAT learner as my participants. I held discussions where we participated in different activities such as photo activity and engaged in various discussions to get ideas and suggestions to uncover how I could improve my teaching practice of Computer Applications Technology in an under-resourced school.

In this chapter, Chapter Five, I reflect on the learnings I acquired from this study. In addition, I give a review of my dissertation. Finally, I deliberated on what I learned from my research about my CAT teaching experiences in an under-resourced school and what I intend to do in the future research studies.

Review of the thesis

In Chapter One, I introduced my research study, and I explained the focus of the study which is my CAT teaching practice in an under-resourced school. As a CAT teacher, I felt a dire need to explore how I could improve my CAT teaching practice. In Chapter One, I explained how the sociocultural theoretical perspective helped me better understand the critical concepts of my self-study. The sociocultural perspective helped me understand that learners can learn from interacting in a social context and are able to share ideas in collaboration. I also outlined my two research questions underpinning my study: "*What can I learn from my personal history about my teaching of CAT in an under-resourced school*," and "*How can I improve my CAT teaching practice in an*

under-resourced school?” I narrated how these two questions helped me understand my past learning and teaching. I also highlighted how I developed a love for technology from childhood to teaching computers in an under-resourced environment.

In Chapter Two, I gave a detailed account of my personal history self-study research process. I explained the reasons why I chose self-study as an appropriate methodology for my research. I also discussed my role as the principal participant and described my three other participants, and my critical friend in this study. I further discussed how the involvement of participants helped me respond to my second research question, *"How can I improve my CAT teaching practice in an under-resourced school."* I also highlighted the multiple self-study practices used to generate data for this study namely artefacts such as photographs, memory drawing, journal writing, collage making, and audio recordings. Lastly, I deliberated on this study's ethical issues and validity and how I overcame all the research challenges that I encountered.

In Chapter Three, I presented my educational journey narrative, where I looked back at the pleasant and unpleasant memories and events of my learning and teaching experiences with the intention of responding to my first research question: *What can I learn from my personal history teaching CAT in an under-resourced school?* To visually illustrate my story, I elicited significant and treasured memories through photographs, memory drawings, and collage making. Tracing back my educational journey helped me make sense of my childhood memories, especially learning experiences and my teaching profession. I therefore became aware of how these experiences affected my learning and teaching practice. Through the personal history self-study, I managed to relive the pleasant and unpleasant experiences that helped me find healing and closure to old wounds from my childhood.

In Chapter Four, I presented how I engaged my participants in an attempt to respond to the second research question, *"How can I improve my practice of teaching CAT in an under-resourced school."* Revisiting and re-examining my educational journey, I became aware of my teachers' different teaching strategies from primary education to tertiary education. From the discussions I had with my participants, I decided to make a collage that represented how I consolidated the learnings. I highlighted how these learnings were generated, and I also demonstrated how these learnings resonated with this study. These three learnings are:

- i) *Time allocation according to policy document versus disadvantages school*
- ii) *CAT teacher as a resource manager*
- iii) *Collaborative learning as a response to limited resources*

Therefore, I realised that these learnings showed how my knowledge and teaching shaped the teacher I became and how they could enhance my teaching practice.

Reflecting on my research journey

Making sense of my learnings in this study

In making sense of the generated data from my personal history and the contribution of my participants, I then engaged in the process of collage making. As described by LaBoskey (2004), "we need to use methods that will provide evidence to us, our students, and to our colleagues that we are discovering that we are reframing our thinking and transforming our practice in indefensible ways" (p. 824). I aimed to see what I can glean from my learnings and my CAT teaching practice in an under-resourced school. Using collage-making as an analysis tool allowed me to generate three learnings:

- i) *Time allocation according to policy document versus disadvantaged school*
- ii) *CAT teacher as a resource manager*
- iii) *Collaborative learning as a response to limited resources.*

The images in the collage represented the significance of each learning that developed from my personal history and input from participants. Through examining my personal history and contribution from participants, I have learned more about my CAT teaching practice in an under-resourced school. Therefore, using the collage assisted me in responding to my second research question, "*How can I improve my CAT teaching in an under-resourced school.*"

According to Vaughan (2005), collage can be used to bring new sense extracted from used pictures. I used a collage to express the reality to get new meaning from data generated from what participants said and reflect on their experiences of me as a friend and a teacher. The collage allowed me to work creatively in a data analysing process. I categorised the discussions from my participants and also included journal recordings. I then used visual images to clarify and depict what the participants stated through images. Van Schalkwyk (2010) maintained that collage could help provide evidence of what "we think and say and do below the level of awareness" (p. 676).

Thus, my collage displayed evidence of their [participants] voices of what was said in our discussions based on my teaching practice. The collage would be matching the expression, and the sentiment that it meant to bring, as described by the participants through visual representation. Using spoken words and narratives from reflections of participants lead to the development of new concepts and learnings.

Using a collage to present my reflective learnings

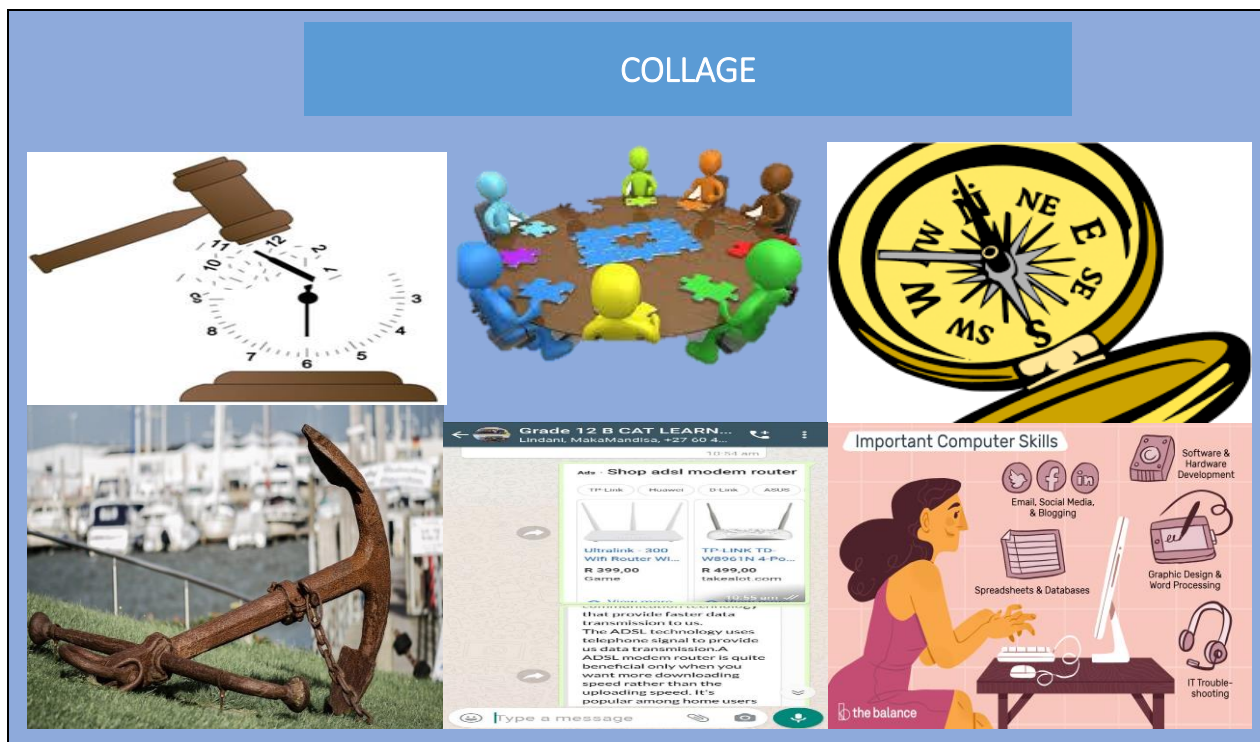


Figure 5.1: Collage representing my learnings

CAT teacher as a resource manager

Through this study, I came to realise that I am not only a teacher but also fully responsible for the functioning of the computer laboratory as a resource manager. A computer is a powerful tool that is used to develop teaching and learning however, I realised that the financial constraints involved in purchasing computers impeded the teaching of CAT as it requires funds set aside for upgrade and maintenance to keep them in a good working order.

Fleisch, (2008) argues that the "inadequate access to and use of classroom resources [and CAT] contribute to the patterns of educational underachievement among our nation's disadvantaged

school children" (p. 139). Elayyan (2019) posits that successful CAT teaching of CAT requires the use of technology resources to enhance teaching and learning. According to the DBE (2011), every school offering CAT should ensure that every 4-5 years, computer hardware and software are upgraded or replaced. However, I came to realise that in my school context, it is a struggle to get adequate support from relevant stakeholders in terms of provision of technical support as highlighted by Chikasha, Ntuli, Sundarjee, and Chikasha (2014) in their study that revealed schools offering ICT, struggle due to lack of technology infrastructure. In as much as DBE says, it is the school's responsibility to transform the state of the computer room and improve the school's infrastructure (DBE, 2011), the discussion I had with my deputy principal and the SGB requesting support in computer lab maintenance and upgrade failed (as it came up in the conversation with my participant in chapter four) to support this statement by the DBE. Therefore, I found myself having to make sure that I make provision for teaching and learning as a resource manager. I became aware of my teaching context and had thought of ideas that would help me to address my challenges, as explained in my discussion with Mrs. Shange (see Chapter Four):

The resolution to my challenge was embarking on fundraising strategies; for example, I managed to organise an excursion to the Royal Showground, which raised enough money to purchase a data projector and a printer from my first fundraising project.



Figure 5.2: A photograph of the projector I bought through fund-raising

Being a CAT teacher in an under-resourced school dictated that I had to make sure that the computer lab was conducive for teaching and learning. My personal history also revealed how as a child, I was taught by my grandmother not to sit and wait for the thing to happen. She taught me a responsibility to make things happen (see detailed in Chapter Three):

I had many responsibilities and chores to do because my grandmother made sure that as a girl child, I was always occupied with things to work on. She used to say ayikho inkomo yobuthongo, meaning "there is no cow that benefits from sleeping," which is the same as "make haste while the sun shines."

I have learned that being a resource manager meant acquiring the multiple use of resources available in the computer lab to the best of my knowledge. For example, it was important that taking charge of the computer hardware and software I had in the computer room by having an updated inventory book with serial numbers of all the computers. Even though the CAPS curriculum states CAT learners are expected to work individually on a computer (DBE, 2011), However in my practice, I have come to realise that in a context such as mine, it is not always possible. This means for my practice as a teacher, sometimes I have to call on what might be best for effective teaching, which means making decisions that support the needs of my context.

Through my conversation with my former CAT learner, I also learned that organising a resource such as a Wi-Fi router helped my learners, especially those who cannot afford to go to the nearest library to complete their research. I have identified this as one of my unmentioned responsibilities as a resource manager.

"I remember you brought your Wi-Fi router to help us connect and access the internet to search for information to do our PAT."

I am always aware of the limitations of the resources I have available in the computer lab and my resources. However with the emerging of the Fourth Industrial Revolution (4IR) in the learning space, it means what I foresee as double trouble for teaching and learning in an under-resourced school. The 4IR has brought transformation in the education system where learning computers actually means adapting to the trend of virtual learning using Internet of Things (IoT) and mobile devices such as smartphones (Elayyan, 2019). According to Elayyan (2019) education system should redirect teaching and learning of all schools towards 4IR and new technologies.

However in my CAT teaching practice in an under-resourced school, the emerging of 4IR dictates that teaching and learning is still going to remain traditionally and classroom bound for a long time.

Time allocation: Policy document vs. disadvantaged school

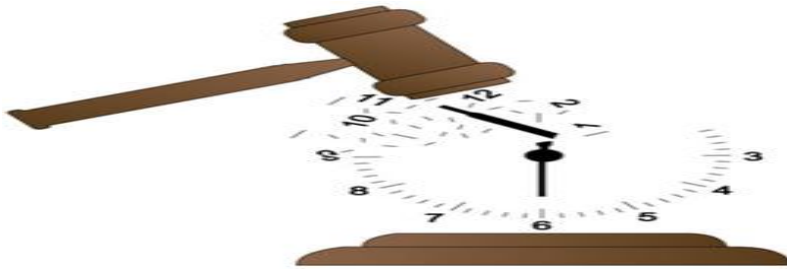


Figure 5.3: Image of a clock representing the limited time allocated to CAT

Another learning that emerged from my process was the relationship between CAT and time. The picture in figure 5.3 extracted from my collage represents the time allocation for CAT teaching and learning according to the CAPS policy document. According to the CAPS policy document, time allocation for teaching CAT in grade 12 is four hours per week for twenty-eight weeks (DBE, 2011). However, I have acknowledged that the policy document did not consider the reality of the infrastructure of some of the schools offering CAT. In my view, the curriculum policy assumes that schools offering CAT are the same in terms of their economic status and provision of resources. As a result, there appears to have been no accommodation for disadvantaged schools with limited resources to implement the curriculum successfully. In my experience, time limitations have been a massive issue in terms of curriculum coverage.

I struggle to adhere to the prescribed CAPS time frames and complete the Annual Teaching Plan (ATP) as expected in my teaching. As Rijuan (2009) identified, the lack of time is a severe hindrance in teaching CAT fruitfully. Hence, I resolved to have three learners per computer instead of one, which meant I needed to allow all learners an equal opportunity to complete a task (see chapter 4). Thus, I took more than the required duration to move to the next task or topic, an act I came to accept as necessary to make sure that all learners get to have a chance to use a computer. The inability to complete teaching the content on time as stipulated in the ATP is demonstrated by Mrs Shange during our discussion:

“This answered my frustration about your poor time management when it comes to completing the ATP on time. I am delighted we had this engagement it has somehow provided insight to some of my issues regarding CAT teaching.”

My research journey made me realise that providing the extra classes was, in a way, mitigating the problem as I attempted to address the limitation brought on by the time challenge. These additional classes were meant to replace the lost learning contact time and allowed my learners to practice computer skills and do PAT. So, what I have learned is that, as a teacher, you need to understand what time means for your context and devise a means to utilise it in a way that still allows for effective learning to take place. I have learned that I need to proper planning and be well organised in order to deal with inadequacy of time for teaching through my grandmother’s teaching. The following extract highlights this:

“Gardening equipped me with the ability to plan and organise my work well, as planting involves proper planning and organising what can be planted, during which season, as well as how to prepare the soil for a certain type of seed.”

Collaborative learning as a response to limited computer resources



Figure 5.4 Image representing teamwork

This image above represents people working together, which I decided to use as a metaphor to represent collaborative learning, which also symbolises teamwork. Collaborative learning refers to a teaching approach where learners actively work in small groups to help their fellow learners master learning (Gillies & Boyle, 2011). It also represents the significance of learners sharing ideas and helping each other solve CAT problems and complete tasks (Samaras, 2011).

The lack of resources encouraged learner's collaboration which helped in the learning of CAT as learners would be working in three to one computer. They helped and guided each other while waiting for their turn to use the computer. For example, I allowed them to engage in discussions to solve problems collectively. The lack of computer resources encouraged collaborative learning amongst my learners due to limited computers in the computer laboratory. Learners would engage in discussions and simplify practical tasks and notes while sharing limited computers.

I drew from the sociocultural theory that when working together and sharing ideas, knowledge is constructed Kelly (2006). As Kelly (2006) also emphasised "knowing-in-practice is a dynamic process resulting from the collaborative actions of teachers and students together in the context of their work" (p. 510). For instance, working with CAT small learner groups helped reduce the strain of teaching and learning with insufficient resources. I considered collaborative learning as a solution to inadequate computer resources as three heads work better than one when solving CAT complex problems and that learners learn better from their peers (Gillies & Boyle, 2011).

Collaboration also meant working together with my learners to develop an understanding of new technologies to implement the enacted curriculum successfully. In this study, the sociocultural theory has been used to emphasise collaborative teaching and learning of CAT to depict active participation of both CAT learners and teachers as both teachers and learners collaborated in different spaces to acquire and develop knowledge from one another (Kelly, 2006). Adopting collaboration through peer tutoring in the CAT classroom assisted me in accommodating learners' needs, as tutors supported their group members to develop more CAT knowledge. To further elaborate, the role of collaborative learning is a means to respond to limited resources. I extracted from my collage (Figure 5.1), a metaphor intended to describe their perspectives of my teaching experience.

Peer tutoring role played my high flyers learners



Figure 5.5: A screen dump of a compass used to represent peer tutoring

The image above represents peer tutors who help guide other learners to find their way in CAT. The compass is a navigating instrument used to find a location, and it was essential to carry this device with you when traveling to avoid getting lost. I have extracted an image of the compass to symbolise a leader who shows the direction towards teaching and learning. I blamed my school for my learners performing poorly due to a lack of necessary computer resources. Self-study has been an eye-opener in making me understand that effective teaching and learning can take place through engaging collaborative learning. I created a group of learners I elected as peer tutors to work with me in reaching out to all the learners during the lesson as it is impossible in the class that is overcrowded. Kapil and Malini (2016) concur that a learner who is a faster learner and master skills can help teach other learners to acquire the knowledge and skills.

Similarly, my peer tutors enabled me to promote effective teaching and learning to improve their performance in CAT, which also improved my teaching practice. Vukile was one of my peer tutors and I made him become my compass. The peer tutors played an essential role in helping substitute the availability of learning material by providing struggling learners with guidance and extra help to master whatever they were experiencing problems with.

As Vukile narrated his experiences as a peer tutor in the CAT classroom, I encouraged him to study more to help his fellow learners. He mentioned that learning CAT was challenging, but after

he became a peer tutor, he discovered the need to put more effort and learned how to simplify concepts to classmates better (as elaborated in discussion with Vukile in Chapter Four):

As I was elected to become a peer tutor where I had to teach other learners who were lagging, it helped me in mastering and acquiring more CAT content knowledge as I had also to teach my group members and that enhanced my learning.

I became aware that employing such teaching strategies and providing my learners with support and guidance helped them improve their skills of using computer technology. My personal history revealed how I was selected to be a peer tutor by my needlework and clothing teacher back then when I was still at high school. Looking at my learning, I remember how my needlework teacher would teach her subject (see details in Chapter Three):

As the school lacked sewing resources for the subject, we had to improvise for teaching and learning to take place. She would divide the class into random groups and select the learners who are high flyers to teach others. I was one of the high flyers as I was in love with the subject hence I was chosen as a peer tutor. She always motivated me to work hard and give my best in life.

My needlework and clothing teacher made me love teaching, and I wanted to be like her when I became a teacher. She loved her subject and was able to transfer the same love to us as learners. That was how I learned about allowing learners to learn from their peers as they feel comfortable.

Another creative strategy I learned through the engagement of this study was using technology teaching tools such as WhatsApp as a mobile teaching and learning tool as elaborated in chapter four. Circumstances forced me to facilitate and enhanced teaching through a collaborative tool such as WhatsApp. Figure 5.6 is a screen dump of a WhatsApp group created for teaching and learning CAT.

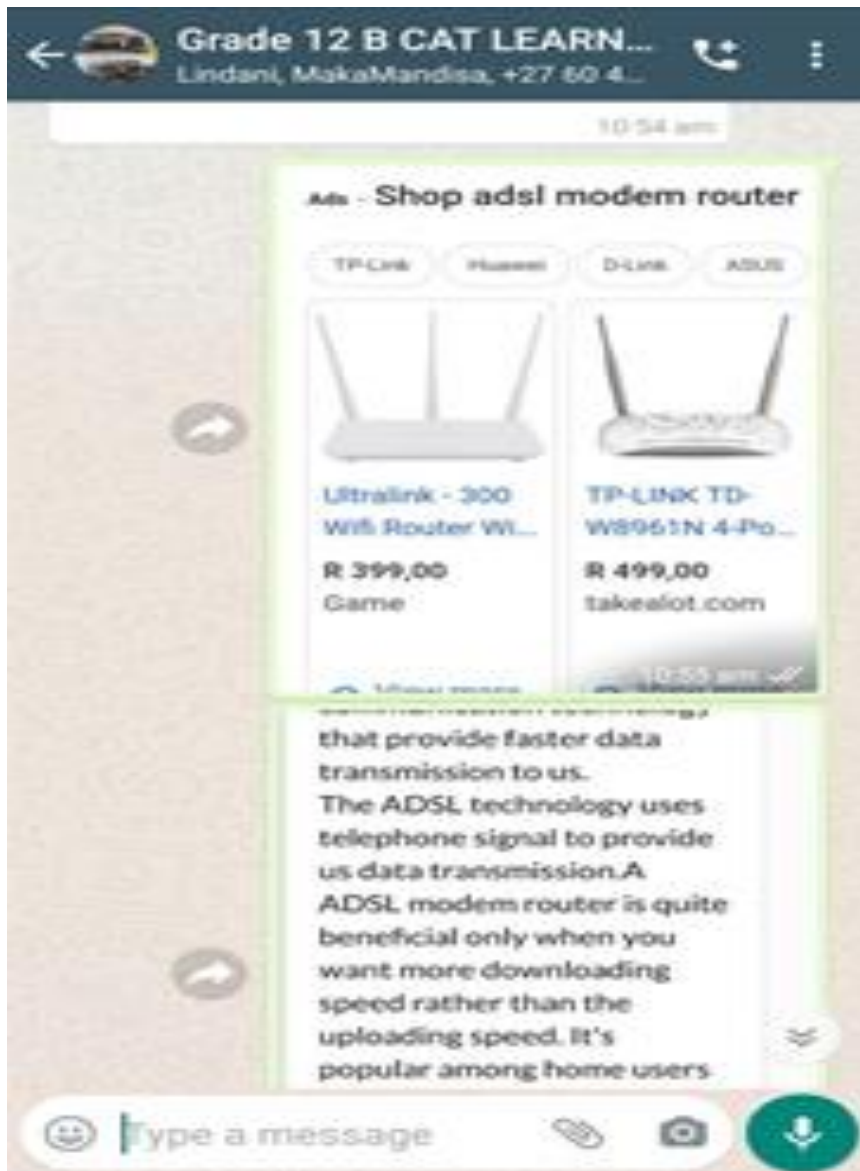


Figure 5.6: A screen dump of a WhatsApp group created for teaching and learning CAT

Through WhatsApp, I made sure that CAT learning continued even when I was away from school as I had created a group of 35 learners to engage in collaborative learning. Most learners are exposed to new technologies such as WhatsApp using their cell phones or their parents' cell phones. WhatsApp allowed me to collaborate with my learners on assignments and give notes as if we were in the same classroom. Through this study, I researched more strategies from the internet on collaborative tools to teach CAT outside the school. It permitted teaching and learning at anytime and anywhere where there is an internet connection (Gon & Rawekar, 2017). The

WhatsApp teaching and learning tool made teaching simpler and enjoyable as most of my learners could take part and asked questions or even send voice notes, even the reserved learners were active.

My personal history made me aware of my Lower primary teacher, who made learning fun and enjoyable through integrating radio technology with her literacy lessons (as explained in Chapter Three).

My grade three teachers would sit us in a circle and place a small box that produced a sound (radio) from it in the centre to listen to educational programs for numeracy and folk tales. Since we were not familiar with this, it made us very happy, and we enjoyed the lesson. Radio technology was the first technology I was introduced to by my teacher.

This study made me aware of different creative and innovative teaching methods to supplement the limited teaching equipment and materials. For example, when teaching content, I organised and divided my learners to work in small groups to share textbooks due to inadequate resources. As Friere (1994) points out that content to be taught is driven by the teaching context, in order to teach successfully.

Personal - Professional Learning

Conducting my research, I made many discoveries about my teaching practice, myself, and my teaching and learning context. Drawing from a sociocultural perspective helped me to know that learning is constructed culturally and socially. Teaching subjects like CAT in disadvantaged schools serving an impoverished community is a huge challenge. Some of their families still do not own a cell phone, let alone a laptop or computer system, to help learners learn, which also affects my CAT teaching. Orr (2003) attests that learners coming from poor households have less access to learning materials and experiences, including books, computers, stimulating toys, skill-building lessons, or tutors to create a positive literacy environment. As a result, there is a lack of parental support as a crucial learning resource. Many parents are not able to provide learners with resources such as a laptop or textbook due to their socio-economic status. The fact that they are unable to assist in an under-resourced as they [learners] coming to the class lack computer knowledge, which they would have acquired from the sociocultural background (Fambaza, 2012).

My self-study research made me understand the importance of becoming a resource manager when teaching CAT in an under-resourced school. It is essential to make sure that resources are well maintained. I have learned to fix minor computer problems independently (Rijuan, 2009). The school cannot afford to pay a technician for maintenance or fixing the computer. In addition, the involvement of parents is crucial as it might help solve the problem of providing learning resources at home, such as cell phones. Even though I understand that not all parents can provide learning resources for the learners since the school is serving a disadvantaged community. However, parents who have smartphones and tablets at home should allow learners to use them for learning purposes.

The self-study empowered me to discover what it likes working as a CAT teacher in an under-resourced school. I became aware of the crucial role I play in school as the primary resource for making teaching possible because, as a teacher, I am at the centre of teaching and learning. As a CAT teacher, I exclude myself and take myself out of the package, yet I am the primary resource as I act as a central access point that connects all other available resources. I collaborated and

enforced teamwork amongst my learners. The crucial role of collaborative learning during CAT lessons is that my learners work together to solve problems through discussions in class.

My self-study research has made me conscious of the importance of time as a significant teaching resource and knowing how to allocate time following the work that needs to be covered as prescribed in the CAPS document (DBE, 2011). A lack of sufficient time hinders the effective implementation of the curriculum. It is vital that, as a CAT teacher, you devise strategies to deal with time constraints.

Learning from a sociocultural perspective

Viewing CAT teaching and learning through the sociocultural lens has helped me understand that learners' learning is constructed through cultural and social interaction (Kelly, 2006). Drawing from the sociocultural theoretical perspective, I came to understand that it is crucial to consider and draw from the knowledge acquired by learners from their social and cultural backgrounds. This knowledge understands their readiness and devise appropriate strategies to develop their thinking and learning of Computer Applications Technology (Miller, 2011).

Through sociocultural theory, I learned the importance of working together with other teachers to develop and help each other understand new approaches to implement the enacted curriculum successfully. In this study, the sociocultural theory has been used to emphasise collaborative teaching and learning of CAT to depict the active participation of both CAT learners and teachers as both teachers and learners collaborate in different spaces to acquire and develop knowledge from one another. Adopting collaboration through peer tutoring in the CAT classroom assisted me in accommodating learners' needs, as tutors supported their group members to develop more CAT knowledge. Furthermore, I now understand as a teacher that I don't have to work in isolation. I should involve other teachers and parents for learning to yield good results, as Blank, Melaville, and Shah. (2003) emphasise that the school ought to engage the community for effective teaching and learning. Hence, adopting sociocultural theory on teaching and learning changed my teaching strategy. I saw the importance of using teaching tools as a fundamental resource in developing CAT teaching practice.

Methodological learning

My study is influenced by the self-study methodology. It allowed me as a CAT teacher to re-examine my teaching practice to learn, improve and grow professionally just as LaBoskey (2004) who maintains that self-study is focused on understanding one teaching practice to improve. I learned that a collaborative learning strategy could be used to enhance my teaching and learning. (Detailed in Chapter Four). My involvement in self-study encouraged me to integrate CAT with collaborative tools that can be used for teaching and learning. When I was admitted to hospital and absent from school for a long time, I took it upon myself to seek parent's involvement to allow learners to use their cell phones to learn CAT through WhatsApp. I made sure I educated the parents about WhatsApp mobile teaching and learning as Barhoumi (2015) describes WhatsApp mobile learning as gaining knowledge through mobile devices such as smartphones and tablets. Similarly, WhatsApp helped enhance my teaching as it allowed my learners to acquire knowledge and understanding of the CAT concept better through sharing videos, notes, images, and voice notes. The use of WhatsApp mobile teaching and learning yielded good results as my learners grasped concepts quickly and as a result, my teaching practice improved.

Through this self-study, I became aware of the correlation between "self" in the self-study, which focuses on improving oneself as a CAT practitioner, and the "self" as a helpful teaching resource to help promote teaching and learning. Pinnegar and Hamilton (2009) concur that in self-study, "the self seeks to explore the gap between who I am and who I would like to be in my practice and studies that self and the others involved. The self takes action to reduce or alter that gap" (p. 12). The self-study benefitted me as I conducted the research, but other teachers also benefit from this study. My intention is to work to improve my teaching practice and also uplift other teachers teaching CAT.

The self-study approach allowed me to understand how my educational experiences shaped my teaching by searching deep into who I am as a CAT teacher and the intentions behind transforming my teaching practice (Samaras, 2011). This study afforded me an opportunity of understanding who I am to implement the resource-based curriculum. As in the past, I could not see myself as a resourceful person, but I now understand how the curriculum can be effectively implemented because it requires me to be a resource manager as well as the teacher. I learned strategies to make

use of the available resources and acquire the ability to use them. This self-study taught me to integrate technology platforms like YouTube instead of depending on textbooks only,

Through self-study, I learned the importance of teamwork as a helpful method to teaching and learning for example, employing group work and peer-tutoring in the classroom to bridge the shortage of computer resources. Also, self-study emphasises collaborating with fellow teachers. The collaboration would be resourceful as bringing other teachers to your classroom who would be bringing their experiences and expertise to help overcome the challenges of lack of CAT teaching resources. Samaras & Freese (2009, p. 5) concurs that "researchers use their experiences as a resource for their research and problematise themselves in their practice with their goal of reframing their beliefs or practice." For instance, working with well-equipped schools to share their resources with my learners, I would take my learners to learn internet technologies. As I am teaching in an under-resourced school, working with other CAT educators would help me tremendously.

The role of a critical friend

This self-study taught me the importance and effectiveness of working with other people, such as participants and critical friends. I worked with three different participants and a critical friend to generate data to conduct a practical personal history self-study. The involvement of a critical friend played a crucial role in transforming my thinking and my reaction towards situations (LaBoskey, 2004). For example, I became aware of my poor listening skills through engagement with the self-study practices, and I now understand that I need to pay attention to learners and form a part of the teaching and learning process. Through engagement with my critical friend, I learned to listen carefully before attempting to respond. To be an agent of change in the classroom, I should be able to listen to my learners to meet their learning needs accordingly.

Interacting with my critical friend taught me a lot about creating a collage about my lived experience. I remember when she said to me, "Find images of you at home, at both primary and high school wearing a uniform." Her suggestions were of great help as I was confused about how I was going to create the collage. This self-study helped me understand myself by sharing ideas with critical friends and I also learned to value her constructive critiques and suggestions that help

shape my study. I believe that self-study is appropriate for this study as it enabled me to revisit and re-examine my lived experiences and learn from them.

Moving forward

In the future, I would like the government to devise a different approach in terms of time allocation where they would also consider schools with limited resources. The curriculum should accommodate all schools, especially the disadvantaged. There is a dire need for disadvantaged schools to have separate funding that does not include norms and standards. This funding would only cater to the computer budget set aside to upgrade and maintain computer hardware and software whenever there is a need for purchasing new technology, for example, buying a Wi-Fi router for learners to access the internet to do research projects. Having an internal body would help maintain the effective functioning of the computer lab to enable the successful teaching and learning process. In the mean time in my practice I need to continue to develop a better relationship with time and curriculum management. This done without compromising my intended curriculum, while making do what is available in my context.

I would also like to involve more schools to work with other teachers in collaborating and sharing ideas on how we could address these challenges—collaborating with my fellow teachers and working together to help us improve the academic performance of the learners and also overcome the difficulties of insufficiency of resources in our schools. The self-study made me aware that I can link to all learning communities and discover strategies to help solve our teaching problems. Furthermore, I would also like to do further study on impact of Fourth Industrial Revolution (4IR) on teaching and learning of Computer Applications Technology in an under-resourced school.

Conclusion

From my personal history self-study, I became aware that the teacher should be the centrepiece as the significant resource available in school. Teachers play a vital role in connecting all the stakeholders involved in the teaching and learning process. This self-study has been an eye-opener as I discovered new things about teaching, especially in under-resourced schools. Taking a journey back to my past personal history has challenged and inspired me to positively contribute to the teaching and learning of CAT in an under-resourced school.

Through personal history self-study, I became more conscious of the value of collaborating and collegiality in enhancing my teaching practice. As a CAT teacher, I want to bring a positive atmosphere in my CAT classroom by supporting and encouraging social interaction to make my teaching effective.

From my personal history, I learned that my grandmother and mother always encouraged and motivated me from an early age. And the data generated from participants revealed traits such as being an innovative and creative teacher. This reminds me of the two hands, left and right hands opened, and a light bulb in between. Each hand signifies a particular characteristic identified by the participants as what they feel about me. Hands have also been used as a metaphor in my study to form a literal and figurative representation, which depicts the importance of hardworking hands in making the teaching process happen.

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APPENDICES

APPENDIX A: ETHICAL CLEARANCE FROM THE UKZN



04 May 2018

Mrs Balungile Pinky Cele (Memela) (204001664)
School of Education
Edgewood Campus

Dear Mrs Cele,

Protocol reference number: HSS/0275/018M

Project Title: Teaching Computer Applications Technology in an under-resourced school: A teacher's personal history self-study

Approval Notification – Expedited Application
In response to your application received 28 March 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Dr Shamila Naidoo (Deputy Chair)

/ms

Cc Supervisor: Dr Lungile Masinga
Cc Academic Leader Research: Dr SB Khoza
Cc School Administrator: Ms Tyzer Khumalo

Humanities & Social Sciences Research Ethics Committee

Professor Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4609 Email: ximbapo@ukzn.ac.za / snvmanm@ukzn.ac.za / mohunp@ukzn.ac.za

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APPENDIX B: PERMISSION TO CONDUCT RESEARCH



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Enquiries: Phindile Duma

Tel: 033 392 1063

Ref.:2/4/8/1462

Ms B.P Cele

P.O Box 401179
Red hill
Durban
4071

Dear Ms Cele

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **“TEACHING COMPUTER APPLICATION TECHNOLOGY IN AN UNDER-RESOURCED SCHOOL: A TEACHER’S PERSONAL HISTORY SELF-STUDY”**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 26 January 2018 to 09 July 2020.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma at the contact numbers below.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

Velabahleke High School


Dr. EV Nzama
Head of Department: Education
Date: 26 February 2018

KWAZULU-NATAL DEPARTMENT OF EDUCATION

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APPENDIX C: INFORMED CONSENT LETTER TO TEACHERS AND FORMER LEARNER

P.O. Box 401179
Red hill
DURBAN
4071

16 February 2018

Dear Participants

REQUEST FOR PERMISSION TO PARTICIPATE IN A SELF-STUDY RESEARCH.

Title: **Teaching Computer Applications Technology in an under-resourced school.** A teacher's Personal History self-study.

The main purpose of conducting this study is to explore what I can learn from my personal history that could help me in teaching Computer Applications Technology in an under-resourced school, to improve my teaching practice.

This study is supervised by Dr Lungile Masinga who is a lecturer at the School of Education at the University of KwaZulu Natal. She can be contacted telephonically at 031- 2603439 or Masingal@ukzn.ac.za for further information.

I hereby request permission for you to participate in this research study. I am currently studying for a Masters in Education Degree at the University of KwaZulu Natal. I am searching for ways to better understand my teaching practice, Personal History self-study will provide me directions to look at my past, present and future.

In this study I will generate data by employing Personal History self-study and artefacts such as collage making will be used with my participants. Through engagement with participants we will be revisiting and re-examining lived experiences focusing on how I attended primary and high school, studying at college, my teaching experience as a novice teacher, my leading experience as a Head of Department and lastly as a Masters student furthering my studies. I hereby request your permission to use your thoughtful contributions from our meetings and also your presence for future meeting discussions. You will be informed in advance regarding the date, venue and time for our meetings.

If I receive your consent, I will use your contributions in a dignified manner and privacy will be considered. All notes and voice recordings obtained from our discussions will be kept in a secured place and discarded if no longer needed for my research purposes. You will not be identified, even the name of your school will not be used in any presentation or publications that might come out of this study.

Kindly be informed that there are no direct benefits to you for taking part in this study and that there are no binding agreements to the study, meaning you may withdraw at any time should you feel the need to. There won't be any negative consequences or be prejudiced as a result of a consent withdrawal.

For further information on research participants' rights you can contact Ms Phume Ximba at UKZN Humanities and Social Science Research Ethics Office on 031-260 3587.

Yours sincerely
Balungile P. Cele

INFORMED CONSENT DOCUMENT FOR PARTICIPANTS

TITLE OF THE STUDY: Teaching Computer Applications Technology in an under-resourced school. A teacher's Personal History self-study.

I _____ hereby confirm that I understand the content of this document and the nature of the study.

I understand that I am free to withdraw at any time from the study without any negative impact to myself.

Please tick in the appropriate box:

<ul style="list-style-type: none">• I consent to the data collection activities by attending meeting discussions and the use of my viewpoints and ideas in the study.	
<ul style="list-style-type: none">• I do not consent to the data collection activities by attending meeting discussions and the use of my view points and ideas in the study.	

I hereby grant permission for Mrs B. Memela to engage in discussion with me in the research outlined above and for the information to be used in this study and in related papers and presentations.

Choose what is applicable

Consent for audio recording

I hereby consent / do not consent to have this discussion recorded.

.....
SIGNATURE OF PARTICIPANT

.....
DATE

APPENDIX D: INFORMED CONSENT LETTER TO A CRITICAL FRIEND

P.O. Box 401179
Red hill
DURBAN
4071

16 February 2018

Dear Critical friend

REQUEST FOR PERMISSION TO PARTICIPATE IN A SELF-STUDY RESEARCH AND TO USE FINDINGS FROM DISCUSSIONS IN CRITICAL FRIENDS MEETINGS.

Title: **Teaching Computer Applications Technology in an under-resourced school.** A teacher's Personal History self-study.

The main purpose of conducting this study is to explore what I can learn from my personal history that could help me in teaching Computer Applications Technology in an under-resourced school, to improve my teaching practice.

I hereby request permission for you to participate in the research study. I am currently studying for a Masters in Education Degree at the University of KwaZulu Natal. I am searching for ways to better understand my teaching practice, Personal History self-study will provide me directions to look at my past, present and future.

This study is supervised by Dr Lungile Masinga who is a lecturer at the School of Education at the University of KwaZulu Natal. She can be contacted telephonically at 031- 2603439 or Masingal@ukzn.ac.za for further information.

In this study I will generate data by employing Personal History self-study and making use of artefacts such as collage making with my critical friends. Through engagement with participants we will be revisiting and re-examining lived experiences focusing on how I attended primary and high school, studying at college, my teaching experience as a novice teacher, my leading experience as a Head of Department and lastly as a Masters student furthering my studies. Other contributions will be from our meetings during our group supervision meetings. I hereby request your permission to use your thoughtful contributions from our critical friends meetings and also your presence for future meeting discussions. You will be informed in advance regarding the date, venue and time for our meetings.

If I receive your consent, I will use your contributions in a dignified manner and privacy will be considered. All notes and voice recordings obtained from our discussions will be kept in a secured place and discarded if no longer needed for my research purposes. You will not be identified, even the name of your school will not be used in any presentation or publications that might come out of this study.

Kindly be informed that there are no direct benefits to you for taking part in this study and that there are no binding agreement to the study, meaning you may withdraw at any time should you feel the need to. There won't be any negative consequences or be prejudiced as a result of a consent withdrawal.

For further information on research participants' rights you can contact Ms Phume Ximba at UKZN Humanities and Social Science Research Ethics Office on 031-260 3587.

Yours sincerely
Balungile P. Memela

INFORMED CONSENT DOCUMENT FOR A CRITICAL FRIEND

TITLE OF THE STUDY: Teaching Computer Applications Technology in an under-resourced school. A teacher's Personal History self-study.

I _____ hereby confirm that I understand the content of this document and the nature of the study.

I understand that I am free to withdraw at any time from the study without any negative impact to myself.

Please tick in the appropriate box:

<ul style="list-style-type: none">• I consent to the data collection activities by attending meeting discussions and the use of my viewpoints and ideas in the study.	
<ul style="list-style-type: none">• I do not consent to the data collection activities by attending meeting discussions and the use of my view points and ideas in the study.	

Consent for audio recording

I hereby consent / do not consent to have this discussion recorded.

.....
SIGNATURE OF CRITICAL FRIEND

.....
DATE

TURNITIN REPORT

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EDITING CERTIFICATE

BALUNGILE MEMELA

10 July 2021

MASTER'S THESIS

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has been edited to ensure technically accurate and contextually appropriate use of language, grammar, logical coherency and presentation.



Dr Anita Hiralaal
