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TRADITIONAL AND COMPUTER BASED TEACHING OF GRAMMAR IN GRADE 3 AT A PRIVATE SCHOOL IN GAUTENG PROVINCE

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A research report submitted to the Wits School of Education, Faculty of Humanities, University of the Witwatersrand in partial fulfilment of the requirements for the degree of Master of Education by combination of coursework and research

Johannesburg
2014

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Supervisor: Dr. Ian Moll

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ABSTRACT

With technology playing a huge role in today's school environment, the effectiveness of introducing different forms of technology into the classroom and how the technology assists teachers or 'holds them back' needs to be assessed.

This study takes a look at the difference between traditional and computer-based teaching of Grammar in Grade three with regards to results, learners' evaluation and teacher preferences towards one particular method or the other. The study was conducted at a private school in northern Johannesburg, Gauteng, South Africa.

The study took a mixed-methods approach. Qualitative and quantitative data were collected and analysed to gain insight into how the teaching methods are used, and if one can be considered more effective, and why.

Ethical approval was obtained from the University of the Witwatersrand. Permission from the school principal was obtained in order for the research to take place. Informed written consent was obtained from all participants and / or their parents / guardians.

The data was analysed by the statistician and results were presented in tables and graphs. The analysis of the results from all data collected illustrated a significant difference in the results between traditional and computer-based teaching of Grammar in grade three. Recommendations include teacher training, computer availability and reliable internet access.

DECLARATION

I declare that this research report is my own unaided work. It is being submitted for the degree of Master of Education at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

_____

Catriona Louise Montagu

_____ day of February 2014

DEDICATION

This research report is dedicated to my most inspiring, supportive and caring husband and our beautiful daughter, Kerry. Thank you Monty for always encouraging me and for allowing me the time at home to complete this research report. This is all for you and our precious family.

ACKNOWLEDGEMENTS

I would like to express my heartfelt thanks to:

- Monty, my husband who has supported and encouraged me throughout this process. He has also sacrificed many things to assist me in getting this report completed. Thank you.
- My friends, family and colleagues who have always believed in me, and have been a constant pillar of strength.
- My colleagues who participated in this research, and gave their honest and valuable input.
- The learners for taking part in this research. Your contribution is greatly appreciated.
- My supervisor, Dr. Ian Moll for your input towards this report.
- Mr. K. Tsotsotso, for your statistical support.

TABLE OF CONTENTS

1. CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY 1
1.1. INTRODUCTION 1
1.2. RATIONALE 1
1.3. PROBLEM STATEMENT 2
1.4. RESEARCH QUESTIONS 3
1.5. RESEARCH AIM 3
1.6. RESEARCH OBJECTIVES 3
1.7. RESEARCH METHODOLOGY 4
1.7.1. RESEARCH DESIGN 4
1.7.2. POPULATION AND SAMPLING 5
1.7.3. INSTRUMENTATION 6
1.7.4. CREDIBILITY AND TRUSTWORTHINESS 6
1.7.5. DATA COLLECTION 7
1.7.6. DATA ANALYSIS 7
1.7.7. ETHICAL CONSIDERATIONS 8
1.7.8. LIMITATIONS 9
1.8. DEFINITIONS 9
1.9. DURATION OF COLLECTION OF DATA 10
1.10. CHAPTER OUTLINE 10
1.11. SUMMARY 10
1.12. CONCLUSION 11
2. CHAPTER 2: LITERATURE REVIEW 12
2.1. INTRODUCTION 12
2.2. TEACHING GRAMMAR IN GRADE THREE 12

2.3. TRADITIONAL TEACHING 14
2.4. COMPUTER-BASED TEACHING / TECHNOLOGY IN TEACHING 14
2.4.1. TEACHER SKILLS/TRAINING 16
2.5. SUMMARY 26
2.6. CONCLUSION 26
3. CHAPTER 3: RESEARCH METHODOLOGY 28
3.1. INTRODUCTION 28
3.2. RESEARCH DESIGN 28
3.3. POPULATION AND SAMPLING 30
3.4. INSTRUMENTATION 31
3.5. CREDIBILITY AND TRUSTWORTHINESS 31
3.6. DATA COLLECTION 32
3.6.1. TEACHING AND OBSERVING 36
3.6.2. INTERVIEWS 37
3.6.3. ASSESSMENT TASKS – CLASS ACTIVITY AND FORMAL ASSESSMENT 38
3.6.4. LEARNER EVALUATION 39
3.7. DATA ANALYSIS 39
3.8. ETHICAL CONSIDERATIONS 41
3.8.1. INTERNAL REVIEW BOARD 41
3.8.2. RIGHT TO PRIVACY, ANONYMITY AND CONFIDENTIALITY 41
3.8.3. INFORMED CONSENT 42
3.8.4. BENEFICENCE 42
3.8.5. NON-MALEFICENCE 42
3.9. LIMITATIONS 42

3.10. SUMMARY 44
3.11. CONCLUSION 44
4. CHAPTER 4: DATA ANALYSIS, INTERPRETATION AND DISCUSSION 46
4.1. INTRODUCTION 46
4.2. DATA ANALYSIS 46
4.3. T-TEST 54
4.4. LEARNER EVALUATIONS 61
4.5. SEMI-STRUCTURED INTERVIEWS WITH TEACHERS 64
4.6. SUMMARY 68
4.7. CONCLUSION 68
5. CHAPTER 5: FINDINGS AND CONCLUSION 69
5.1. INTRODUCTION 69
5.2. CONCLUSIONS 69
5.2.1. OBJECTIVES OF THE STUDY 69
5.3. RECOMMENDATIONS 71
5.3.1. TEACHER TRAINING 71
5.3.2. AVAILABILITY OF COMPUTERS IN CLASSROOMS 71
5.3.3. INTERNET ACCESS 71
5.4. CONCLUSIONS 71
6. BIBLIOGRAPHY 73
7. APPENDICES 77
7.1. Appendix A 77
7.2. APPENDIX B 79
7.3. APPENDIX C 81
7.4. APPENDIX D 83

7.5. APPENDIX E 85
7.6. APPENDIX F 86
7.7. APPENDIX G 88
7.8. APPENDIX H 90
7.9. APPENDIX I 92
7.10. APPENDIX J 94
7.11. APPENDIX K 95
7.12. APPENDIX L 97
7.13. APPENDIX M 99

LIST OF TABLES

Table 1: Class Activity for Adverbs 58
Table 2: Class Activity for Conjunctions 58
Table 3: Assessment for Adverbs 59
Table 4: Assessment for Conjunctions 59

LIST OF GRAPHS

Graph 1: Class Activity Results 49
Graph 2: Class Assessment Results 53

LIST OF ACCRONYMS USED IN THIS REPORT

CAPS Curriculum and Assessment Policy Statement

HOD Head of Department

ICT Information Communication Technology

IT Information Technology

QTS Qualified Teachers Status

1. CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY

1.1. INTRODUCTION

This chapter introduces the scientific foundation of the study. The rationale for the study, problem statement, research aim and objectives are presented in this chapter. In addition, the research methodology and conceptual framework utilised for this study are outlined.

1.2. RATIONALE

"The chalkboard was invented in 1801. While many twenty-first century learners have digital devices in their pockets, teachers are using technology developed more than two centuries ago as teaching aids. It is no wonder that many learners are bored." (McCabe and van Wyk, 2012, p. 2).

One of the most valued benefits that Information and Communications Technology (ICT) affords over traditional teaching practices is its capacity to extend the student's learning beyond the actual limitations of the classroom. This enhancement of the student's learning refers not only to the place, but also to the time and people that are involved in the process. Arbelaiz and Gorospe (2009) make it known that there are positives to having ICT's in the classroom. They are in agreement with McCabe (2012) that current technologies should be used in the classroom, and that the outdated technologies do not keep the learners captivated and interested.

The school where this study took place is a private school in northern Johannesburg, South Africa. A private school in South Africa is a school that is usually not subsidized by the government; therefore the parents are required to pay school fees. A government school is a school that is subsidized by the government. The socio-economic environment in which the school is situated would influence whether parents of learners attending that school would be required to pay school fees for their children's

attendance. Not all parents are required to pay fees, depending on their individual financial situation. This particular school is in the northern suburbs of Johannesburg, and is considered to be situated in an affluent part of the city. Therefore, one can consider the learners/participants in this study to be reasonably well off and come from an advantaged background socio-economically. This school enrols male and female learners from all races, and most classes are multi-cultural.

Many teachers of today still teach in a traditional or 'chalk and talk' method, when there is so much more available to teachers than simply a chalkboard. Computers are available in most private schools in northern Johannesburg, yet in many cases these computers are not used as a teaching aid, but rather as a drilling machine (as a tool to reinforce a concept through drill exercises, not as a tool to assist learning). The school where I teach (a private school in northern Johannesburg), where this research was conducted, uses computers as a teaching aid, to assist in the imparting of knowledge to learners, by using well planned and thought out lessons that learners are able to work individually, in pairs or in small groups.

For the purposes of this study, I investigated the teaching of Grammar in two Grade three classes. I looked at and compared the use of traditional teaching of Grammar and computer-based teaching of Grammar.

1.3. PROBLEM STATEMENT

The teaching of Grammar in Grade three can be done through many teaching methods. Looking at traditional teaching and computer-based teaching of the above (see page 9 for definitions), this research aims to establish which of these approaches is more effective in meeting the outcomes required, or are both approaches equally able to do so effectively?

Although much research has been done to prove the success of technology in the classroom, in South Africa, little research has been done to compare traditional teaching with computer-based teaching of Grammar in the Foundation Phase, and the

effectiveness of these two methods according to assessments (formal and informal), teacher views and learners evaluations.

It is for this reason that this research focuses on Grammar in Grade three, and how successful the two teaching methods appear to be, within the context of a private school in the northern suburbs of Johannesburg.

1.4. RESEARCH QUESTIONS

- Does one method (traditional or computer-based teaching) show better results in the learners' assessment results?
- Do the learners prefer being taught in either method or prefer a combination?
- Do teachers have preferences, and do these preferences show in how they teach?

1.5. RESEARCH AIM

The purpose of this research was to explore and describe the traditional teaching method and the computer-based teaching method of Grammar in Grade three, and to establish whether one of these methods proved to be superior in terms of results, learner satisfaction / evaluation (through formal and informal assessments) and teacher preferences.

1.6. RESEARCH OBJECTIVES

The objectives of this study were to:

- To investigate the traditional teaching and computer-based teaching methods used for teaching Grammar concepts in Grade three at this particular school
- To explore the learners' results for class activities and formal assessments
- To examine how the learners feel about the two methods of teaching, and to establish whether they have preferences and why; and

- To describe teachers' beliefs about the two teaching methods, and whether one or the other approach is able to attain better results

This study takes a focus on which teaching method (traditional or computer-based) is able to attain superior results (by using formal and informal assessments). Furthermore, this study looks at whether the learners demonstrate a significant preference to one or the other teaching method (traditional or computer-based) or if a combination of the two methods is preferred by the learners. In addition, this study looks at the teachers' preferences and their skills with each method.

1.7. RESEARCH METHODOLOGY

The research methodology will be described briefly below, a more detailed description can be found in Chapter 3.

Educational research measures complex human characteristics, as well as thinking and problem-solving skills. Moreover, measuring achievement, intelligence, leadership-style, group interactions or readiness skills involves formulating conceptual definitions and deciding issues of validity. Some educational research has become possible only as valid and reliable forms of measurement have been developed (McMillan and Schumacher, 2006).

This study has taken on a mixed-methods approach; both qualitative and quantitative research methods have been used.

1.7.1. RESEARCH DESIGN

This research was principally a qualitative research exercise since the primary part of this study used the case study methodology. However, since learners' results were used, this study has also been partially based on number of quantitative methods. Therefore, this study took on a mixed-methods nature, as both quantitative and qualitative approaches were used.

“The ingredient that is most commonly mixed in mixed methods research is the methods, not the methodologies, and the methods are mixed in the quite specific sense that both qualitative and quantitative ones are used. Because of this, some proponents of mixed methods research argue that this approach represents the ‘best of both worlds’ usually understood as the two worldviews of positivism / quantitative research and interpretivism / qualitative research” (Giddings and Grant, 2007, p.56).

1.7.2. POPULATION AND SAMPLING

A population is a group of elements or cases, whether individuals, objects or events, that conform to specific criteria and to which we intend to generalize the results of the research (McMillan and Schumacher, 2006).

The population for this study was the entire group of Grade three learners at the school where the research took place, consisting of 116 Grade three learners. This group would represent all Grade three learners at similar private schools in the province of Gauteng, South Africa.

The group of subjects or participants from whom the data are collected are referred to as the sample (McMillan and Schumacher, 2006). The sample is a representation of the total population.

The sample for this study consisted of 45 learners from two classes (23 from one class and 22 from another class), of mixed races (Africans, Whites, Indians) and both males and females from a private school in northern Johannesburg. In addition four Grade three teachers (colleagues of the researcher), participated in interviews and also formed part of this study.

The sample was a convenience sample, which is “a group of subjects selected on the basis of being accessible or expedient” (McMillan and Schumacher, 2006, p.137). As this research was conducted at the school where the researcher works, it certainly is considered a convenience sample.

1.7.3. INSTRUMENTATION

Instrumentation refers to the manner in which the changes of instruments or persons collecting the data may affect the results of the research (McMillan and Schumacher, 2006). This forms an important part of reliability and credibility of the study.

Class activities and formal assessment tasks were designed to attain results from the learners, according to each teaching method (computer-based and traditional). Observation schedules were designed in order for the researcher to take notes during lessons that were taught. Interview questions were planned for the semi-structured interview with the Grade three teachers. A child friendly learner evaluation sheet was designed in order for the learners to be able to freely express their opinion and views on the two teaching methods that they were exposed to during the study.

All tasks, evaluations and schedules that were designed by the researcher underwent thorough examination by colleagues in Grade three, the grade head and the HOD (Head of Department) of Foundation Phase, to ensure that these were designed to be fair, at the expected level, and that any form of bias was avoided.

1.7.4. CREDIBILITY AND TRUSTWORTHINESS

In ensuring credibility, Lather (1991) identified four types of validation of which one is that of “triangulation”. As cited in Creswell (2007, p.208) “in triangulation, researchers make use of multiple and different sources, methods, investigators, and theories to provide corroborating evidence”. This research has used interviews, observations, learner evaluations and learner results from informal and formal assessments as sources of data collection to ensure credibility. By using numerous sources, it ensures that there are no inconsistencies, and that each source of data collection supports the other.

In addition, “member checking” was used to ensure credibility and trustworthiness which “solicits participants’ views of the credibility of the findings and interpretations” (Creswell, 2007, p.208). In order to achieve this, the transcriptions of the interview held

with the Grade three teachers and the results or findings of the study were taken back to the participants for their perusal so that they could appraise the accuracy and credibility. Participants were given the opportunity to withdraw information as well as change any of their responses should they wish to do so.

Finally, by working with a supervisor, this ensures that the researcher does not falsify findings or misinterpret any of the data that was gathered. This is referred to as a "peer review which provides an external check of the research process" (Creswell, 2007, p.208). Lincoln and Guba (as cited in Creswell, 2007, p.208) would refer to the peer reviewer as a "devil's advocate" in that they ensure the researcher stays honest and that the methods, meanings and interpretations are credible and trustworthy.

1.7.5. DATA COLLECTION

The data was collected over a period of three weeks. All data was collected from the school where the study was conducted. No data was collected until permission was granted from the principal of the school, and all consent forms from parents / guardians, learners and teachers were collected. A register was kept to ensure that all participants had retuned consent forms indicating their willingness to participate in the study.

The first two weeks of the study consisted of lessons being taught and observed, in addition to class activities and formal assessment tasks being completed by the learners. The following week, learners completed their evaluation, and the teachers were interviewed.

1.7.6. DATA ANALYSIS

Data analysis "is the process of bringing order, structure and meaning to the mass of collected data" (de Vos, Strydom, Fouche and Delport, 2006, p.333). The reason that we analyse the data collected is to use the information collected to help answer the research question. It is also a process where information collected is separated into that which can be used to assist in answering the research question, and that which cannot

be used. It is unlikely that each and every bit of information collected will be able to assist in answering the research question.

The data collected needed to be analysed in order for the research to continue and results to be graphed. I transcribed the interviews and coded any trends (positive and negative) that the Grade three teachers had noted with the use of each of the two teaching methods being assessed. I did a similar coding exercise with the data collected from observations of the classes and responses given by the learners.

The learners' assessment tasks and learner evaluations form the quantitative part of the research, I analysed the data and put it into a graph format that is easily understood by the readers.

Data analysis is the method by which raw data is organised and presented to provide meaningful results (Brink, Van der Walt and Van Rensburg, 2006, p.170). A qualified statistician, Mr. K. Tsotsotso, was consulted with and assisted in computing the T-test.

1.7.7. ETHICAL CONSIDERATIONS

In order to maintain the integrity of the research, the researcher implemented and ethical protocol to be used as a guide throughout the study.

Firstly the researcher attained consent from the Ethics Committee of The University of the Witwatersrand. Upon receiving a protocol number, permission from the principal of the school was requested. As this is a private school that is fairly new, there is no PTA (parent-teacher association) established, and therefore only permission from the principal was considered acceptable. Once permission was granted, consent forms were sent to all participants, and in the case of the learners, who were under eighteen years of age, consent forms were sent to their parents/guardians too. The consent forms clearly stated that this was an invitation to part-take in the study, and that participation was voluntary, and that withdrawal from the study at any time is allowed and will not have any negative consequences. Further to this, all participants were guaranteed confidentiality at all times – their names or the school name will not appear

in the report. Once all consent forms were collected, the research took place. All raw data that was collected during the study will be kept securely for a period of 3-5 years after the study, it will then be destroyed by means of a paper shredder.

1.7.8. LIMITATIONS

Learners being absent and affecting the sample size was a limitation, however as the sample size was fairly large (45 learners) at its full capacity, this can be assumed to not affect the results of the study. Other limitations which came to light during the study are discussed in detail in Chapter 3.

1.8. DEFINITIONS

Traditional Teaching

Moll (in McCabe & van Wyk, 2012, p.11) refers to traditional teaching as the 'chalk-and-talk' methodology, and clarifies this as "when a teacher mostly stands in front of the class lecturing, expecting the learners will learn simply by being told something."

In this study, this is what is meant by traditional teaching – when a teacher is the purveyor of knowledge, and the teacher is in charge of getting the knowledge across to their learners. However, traditional teaching has changed over the years, and while the teacher may still be in front or the class or around the class, he/she is there to guide the learners in activities and to facilitate learning.

Computer-based Teaching

This refers to teaching taking place in a computer room, whereby learners are in front of a computer completing pre-planned lessons individually. There is less teacher interaction, however the teacher is present and available to facilitate learning and assist the learners when necessary.

Note, that the focus here is that the lesson has been planned in advance (as with any well-constructed lessons), and that the learners are required to complete the tasks on their own.

Grade three/Foundation Phase

Grade three is the fourth year of formal schooling in the South African schooling system, and falls under the Foundation Phase category. The Foundation Phase is the first four years of our schooling system, namely: Grade R, Grade 1, Grade 2 and Grade 3.

1.9. DURATION OF COLLECTION OF DATA

The lessons were taught over a period of two weeks, commencing on Monday 2 September 2013 and ending Friday 13 September 2013. The teacher interviews and learner evaluations took place the following week on Tuesday 17 September 2013.

1.10. CHAPTER OUTLINE

Chapter 1 outlines the rationale of the study, including the aim, objectives and a brief overview of the methodology used for this study.

Chapter 2 presents the literature review for this study related to international and local computer-based teaching and traditional teaching.

Chapter 3 provides a detailed description of the methodology used for this study.

Chapter 4 presents the data analysis and interpretation of the results from this study, and discusses these.

Chapter 5 provides the conclusions and recommendations resulting from this research.

1.11. SUMMARY

There is much debate around the value and effectiveness of the use of computers in education, particularly with regards to younger learners. Traditional teaching methods which have been used over the centuries appear to be less valued since computers have been brought into the field of education. This study attempts to establish whether

computer-based teaching is effective and learner-centred; and to further test whether - traditional teaching methods are still viewed as valuable by teachers and learners.

1.12. CONCLUSION

In Chapter 1, an introduction and rationale to the study was provided. The aim, objectives, research methodology, conceptual framework and ethical considerations were outlined. Chapter 2 will discuss the literature related to traditional teaching and computer based teaching in the Foundation Phase or early school years.

2. CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

"Technology is dominating all spheres of life. It has become an integral part of teaching and learning in schools in many parts of the world. Sadly, in South Africa we are lagging behind. It is no longer *whether* technology should be used in the classroom, but rather *how* the process of making it a part of the classroom experience can be fast-tracked" (McCabe and van Wyk, 2012, p.v).

One can see from the above, that South Africa is a few steps behind the rest of the world as far as the use of computers in education are concerned. However, that does not mean that there is not hope for successful implementation, depending on the school, the governing bodies of the schools and the parental involvement. It also does not mean that teachers without computers are not able to successfully educate the youth.

This chapter takes into consideration the literature regarding technology in education, traditional teaching, and the teaching of Grammar at the Grade three level, which is the age group that this study focused on.

2.2. TEACHING GRAMMAR IN GRADE THREE

Lefstein (2009) summed up rule-based grammar teaching using the introductory note from the *Everyday Grammar* textbook:

> Most of the things that you learn to do need rules. When you play a game, you follow rules. You are allowed to do some things and you are not allowed to do other things. This gives order to the game and helps to make it more enjoyable. If everyone did as they liked, the game could not be played properly. When you speak or write English, you also have to follow rules. You already know many of the rules from learning to talk and from listening to other people. You also learn rules from reading books. The rules of English are called grammar.

(Agar, 1980, p. 4)

Lefstein (2009) further adds that this approach to mastering language is to enable one to articulate oneself clearly and properly and is the reason that one learns the rules of grammar. The rules of grammar are “typically taught through teacher transmission, whole class recitation and individual pupil practice on grammar exercises” (Lefstein, 2009, p.382).

Grammar is the teaching of rules. This is usually done from early grades, with the more basic rules, and these rules are built upon in higher grades, for example tenses. In Grade three we teach basic tenses (in accordance with the Curriculum and Assessment Policy Statement (CAPS) document), and how the verb usually changes, for example “running” becomes “ran”. In later grades this is advanced to the teaching of past participles and more complex grammar rules.

The background of CAPS is as follows: in 1997 outcomes based education was introduced in an attempt to overcome the curricula divisions associated with South Africa’s past as an Apartheid-state. By 2000 it was evident that this needed reviewing. This led to the first curriculum revision: the Revised National Curriculum Statements. In 2009 further reviewing took place, and the National Curriculum Statement Grades R-12 was established; this is what teachers in South Africa are currently using as a guideline for their teaching. Within the National Curriculum Statements Grade R-12, is the CAPS document which outlines what is to be taught and learnt in each grade on a term-by-term basis (Department of Basic Education, 2012).

According to Arnell (2012), in the 19th century grammar was considered to be the most important part of learning a language. However during the 1980’s grammar was not considered important, and in fact the teaching of grammar rules was discouraged. Today, grammar and the rules of English are considered central to the teaching of English, but it is the manner in which it is taught that causes the debate about the importance of teaching grammar.

Computers used in teaching and learning originated in the 1970’s and has evolved since then. Kenning (2007) avers that using computers in education has two significant

advantages, namely: that it allows learners to gain control of their own learning, and that it assists teachers in being able to individualise their teaching.

2.3. TRADITIONAL TEACHING

> "The term 'traditional grammar teaching' implies a focus on rules, patterns and grammatical forms. Traditional grammar teaching, although somewhat difficult to pinpoint, could be described as 'focus on forms' instead of 'focus on form'. 'Focus on forms' implies that the linguistic part of the language is emphasized. Forms or structures become more important than communication. In contrast, 'focus on form' is looking at the meaning, rather than to concentrate on the structure of a language."
>
> (Ellis, et al., 2002)

2.4. COMPUTER-BASED TEACHING / TECHNOLOGY IN TEACHING

Since the early 1980's American corporate leaders and public officials placed an emphasis on introducing electronic tools into schools, and this became a priority once the success of computers in the workplace had proved to increase productivity (Cuban, 2001).

> Louis Gerstner, Jr., IBM's Chief Executive Officer said "Before we can get the education revolution rolling, we need to recognize that our public schools are low-tech institutions in a high tech society. The same changes that have brought cataclysmic change to every facet of business can improve the way we teach students and teachers. And it can also improve the efficiency and effectiveness of how we run our schools." (Cuban, 2001, p.13)

It was believed that teachers with the aid of technology would be able to "convey far more knowledge and skills to students in less time" (Cuban, 2001, p.14).

Cuban (2001) demonstrates in the above quotations that the implementation of technology in schools is a method that has evolved since the 1990's. This process, nearly twenty years later, is still in progress in some parts of the world, and certainly in South Africa. While we do have a dramatically different background and radically different economy to many first world countries, the transition to a technology-upported approach to education, is a process that does not seem like it will take place soon in some of our South African schools.

While technology was seen as the ultimate solution to many educational issues, it too had problems of its own. Expense is the greatest issue that the American government had to face. The majority of South African public and private schools, are currently challenged with implementing this method of teaching and learning. Jamison et al (cited in Cuban, 2001) make it clear in the above statement that the introduction of computers into classrooms is not to replace the teacher, but rather to assist the teacher to become more effective and produce better results.

In the Foundation Phase classroom, young learners are reliant on a teacher and face-to-face interaction. Computers are tools that can assist teachers to obtain learner outcomes in an enhanced manner. A solely computer-based course with no physical human contact may prove to be successful at a high school or university level, but not at the beginning stages of one's school career.

Computers may be able to replace staff at a business level – for example banks – where many customers now use a computer instead of going into a bank, and this had a huge impact on the staff of many banks around the world. However, education is predominantly about children, teachers and their interactions together, and a computer should not be used to simulate this interaction and personal touch.

According to Dudeney and Hockly (2007), using technology in teaching language is not new. Tape recorders, later CD players, videos, overhead projectors and video have been used and they are still used in classrooms internationally.

Technology as a tool to assist the teacher is not a new idea, as demonstrated above, many forms of technology have been used in the past, and are still being used. These tools were designed to assist the teacher, and to enhance the learning process and outcomes.

There has been a 'push' all over the world to implement technology into schools and other places of learning. Yelland (2001) made note of Papert's criticism towards policy makers who were: " ...determined to use computers but can only imagine them in the framework of the school system as they know it: children following a predetermined curriculum mapped out year by year and lesson by lesson. This is quite perverse: new technology being used to strengthen a poor method of education that was invented only because there were no computers when school was designed."

Papert (1996) makes an interesting criticism that simply using a computer in the old fashioned way of teaching is not going to attain the desired results. Teachers need to change their way of teaching, and use the computer as a tool to improve the kind of teaching and learning that takes place. This brings to the point of teacher training to this discussion.

2.4.1. TEACHER SKILLS/TRAINING

With many stakeholders convinced that computers will be the end of any and all educational issues, one needs to look and see if these assumptions are indeed true. Almost three decades later, many schools in the United States are equipped with computers, yet there are still fundamental issues in their education system. Many questions remain unanswered, such as: Are computers the answer to making children gain more knowledge? Can traditional teaching methods, without the assistance of computers or the internet achieve similar or better results?

Elston (2007) states that:

> The change from IT to ICT was introduced as part of the National Curriculum for schools in England (2000) to reflect the growing importance of communication

> when considering information technology. The evolution of ICT within primary education has had a mixed reception. Excitement to absolute dread covers the range of emotions experienced by primary school teachers and many needing to retrain to keep ahead of computer savvy pupils raised in homes where a PC is as common as a TV. Although ICT is still not embraced by all it is generally the view that the measures taken by the government over the past few years have helped to equip primary schools with the resources and expertise to integrate ICT into the National Curriculum. (Elston, 2007, p.15)

Elston (2007) highlights the fact that in England, although ICT's (information communication technology) were integrated into the National Curriculum, there are still teachers who fear using ICT's to teach with, and training will need to take place, in order for those teachers to feel confident and be fully equipped to successfully use ICT's in their classrooms. Once again, the point of teacher training and teachers being able to use the tools effectively is seen as highly important to implementation.

In support of Elston's argument is Schofield (1995, p.225) who recognized that the possibility to change education will only be realized when "….teachers who desire change have the knowledge that they need to incorporate technology into the curriculum, as well as the interpersonal and pedagogical skills they need to function effectively in their new roles."

Yelland (2001) advocates this further by stating:

> Even when computers are present in schools it has been demonstrated that the need for professional development of teachers is critical to their successful implementation. It is essential to ensure that teachers are confident and competent to use software that is available to them in an integrated way, and they should be supported in doing so. (Yelland, 2001, p.28)

Oppenheimer (1997) went into many schools to see the effects of computers and how they were being used in the classroom:

> Esther Dyson, the president of EDventure Holdings and one of the task force's leading school advocates, told me recently "Shop with a good teacher is probably worth more than computers with a lousy teacher. But if it's a poor program, this may provide a good excuse for cutting it. There will be a lot of trials and errors with this, and I don't know how to prevent those errors." (Oppenheimer, 1997, p.13)

This would be true in the current South African context. Many schools are trying to implement technology into the classroom – but if the teachers are not properly trained, then traditional teaching methods would prove better (with properly trained teachers). Sufficient training for teachers in the new tools they are expected to use would certainly be key to the success of any implementation. Just as in business, many investors would not think of starting a business or investing in a business that does not have staff that are properly trained, have experience and are confident to operate and run their business. Yet we appear to do this in education, where we are not in a business to make profit, but to attain great results from our learners.

"The teacher is the key to successful use of technology in a school. A teacher who understands how to use technology as a teaching tool, and who knows how to make it accessible to learners as a learning tool, is an asset to a school" (McCabe and van Wyk, 2012, p.v).

McCabe and van Wyk (2012) sum it up very well – a teacher is a great asset to a school, and certainly our education system if they have the skills and understanding of how to embrace technology in the classroom and to use it as a learning tool. 'Learning tool' implies something that assists the learners to learn, and not something that replaces the teacher, but rather a tool that the teacher uses effectively to attain improved interest, have active involvement and achieve better results in today's classrooms.

Lam (2007, p.1) stated that "technology should enhance learning. There is no value in just having access to it but more important how it is used." Lam (2007) clarifies for us again that technology needs to be used in a manner that enhances learning, and that

creates an environment that encourages thinking. One can use the computer for basic drill and repetition exercises, but this would not be enhancing learning. In order for teachers to enhance learning and make the best use out of technology they have been provided, they need to be sufficiently trained so that they can use these tools to their maximum potential, and the full benefit of the learners.

McCabe and van Wyk (2012) are in total agreement with Jamison et al (cited in Cuban, 2001), that the teacher still plays a vital role, and that computers should be used alongside and with the teachers, and are not intended to replace teachers.

Dyson (cited in Oppenheimer, 1997), Elston (2007), McCabe and van Wyk (2012), and Yelland (2001) all highlight the importance of teachers being properly trained before implementation, and in order for implementation to be successful. I would certainly agree with the above authors that, like with anything new, the operator (in this case the teacher) needs to be knowledgeable and confident before the implementation can successfully occur. This would also ensure (or have ensured in the past), that the large amount of funds that governments around the world have spent and are still spending on putting technology into classrooms, was or is used efficiently.

Lam (2007, p.9) sums it up very well by stating that “the important fact is that it needs to be used appropriately for it to be effective”. This statement clarifies what the above authors state that teachers need to be trained, in order for computers to be used fittingly and for the use of them in the classroom to be effective.

Bates (1991, p.1) argues that “the history of education is littered with the corpses of technology-based projects that were killed because of the high operating costs, problems of adaptation to local conditions, lack of skilled personnel to operate the technologies, and lack of effectiveness.” Incorporating technology into schools certainly is an enormous and expensive task, and has many difficulties that the Department of Education has had to deal with, and as Bates (1991) clearly states, overcoming these difficulties sometimes proved to be too difficult and hence ruined some projects. When implementing such an enormous strategy, it is not simply one or two difficulties that need to be catered for, but many. In this case Bates (1991) lets it be known that

expense, adaptation, teachers not having the skills to teach with computers all leant towards the implementation proving to be unsuccessful. He further highlights the point of teachers needing the skills (as the above authors do) in order for a project to be successful.

Elston (2007) stated that:

> The professional standards for Qualified Teachers Status (QTS) state that teachers should know how to use ICT effectively, both to teach their subject and to support their wider professional role. The revised draft standard (January 2006) gives the same message; teachers should know how to use skills in literacy, numeracy and IT to underpin their teaching and support their wider professional activities. Teachers are expected to use ICT as a learning tool but also to recognize the importance of ICT in planning, assessment and classroom management. ITT programmes reflect this by encouraging trainees to use ICT's with discrimination and appropriately when both planning and delivering lessons. The emphasis in the classroom is on using ICT only where it adds value to a pupil's learning experience. (Elston, 2007, p.19)

Elston (2007) makes it known that in England there were standards set out by boards and professional bodies, that teachers should be using ICT's not only to enhance their teaching and the children's learning, but to assist in all aspects of the job – planning, researching and delivering of lessons. This emphasizes the importance of having teachers who are properly trained, and who can see the advantages of this tool not only for in the classroom when teaching, but in all aspects of their jobs.

Despite the wealth of experiences both locally and from around the world on which this country can draw in planning and implementing technology-enhanced learning, it appears that we are repeating many of the mistakes that have been made in such initiatives. Thus, South Africa does not yet appear to be 'leap-frogging' mistakes made around the world as was hoped would happen, but seems rather to be emulating those mistakes (SAIDE, 2000).

It would appear that from SAIDE's research, that South Africa has not managed to avoid similar mistakes that were picked up as 'trends' when other countries around the world were implementing technology into classrooms. Although we are a third-world country, one would presume that when implementing a new strategy that is of great cost to the country, that it be thoroughly investigated by qualified professionals in the relevant field. The fact that we are third world, and somewhat 'behind' other countries, could be used as an advantage – we are able to see the mistakes and scale of such implementations, and to learn from this, and avoid making similar mistakes.

In his visits to institutions, Oppenheimer (1997) spoke with Sherry Turkle, a professor of the sociology of science at the Massachusetts Institute of Technology and a long time observer of children's use of computers. She said "the possibilities of using this thing poorly so outweigh the chance of using it well, it makes people like us who are fundamentally optimistic about computers, very reticent" (Oppenheimer,1997, p.14).

So whilst many stakeholders and officials thought that computers in the classroom would solve all problems, Oppenheimer (1997) observed and spoke to many teachers and professors who noted that computers had not been successful in solving problems in schools, but rather created a new set of problems.

Teachers are key to such projects, and their opinions and observations should be highly esteemed, and taken into account. From Oppenheimer's (1997) observations, it is clear that teachers were probably not consulted with enough, and that their opinions, views and professional observations could without doubt have assisted in making an enormous task less complicated.

That is not to say that computers did not bring about some form of success. Computers in the classroom, when used properly and effectively did and can create the optimum and required outcome. As one teacher said "computerized learning inevitably forces teachers to adjust their style – only sometimes for the better" (Oppenheimer, 1997, p.13).

Another teacher – of the younger grades, mentioned to Oppenheimer (1997, p.14), "these kids still need the hands-on" – meaning that children still benefit from the

opportunity to manipulate physical objects such as beans or coloured blocks as they learn.

The value of hands-on learning, child-development experts believe, is that it deeply imprints knowledge into a young child's brain, by transmitting the lessons of experience through a variety of sensory pathways. "Curiously enough," the educational psychologist Jane Healy (in Oppenheimer, 2003) wrote in *Endangered Minds: Why Children Don't Think and What We Can Do About It* (1990), "visual stimulation is probably not the main access route to nonverbal reasoning. Body movements, the ability to touch, feel, manipulate, and build sensory awareness of relationships in the physical world, are its main foundations." The problem, Healy wrote, is that "in schools, traditionally, the senses have had little status after kindergarten" (Oppenheimer, 1997, p.15).

So while computers can assist teachers, traditional teaching and concrete, physical or tactile methods of teaching still play an important role – particularly in the younger grades.

Oppenheimer (1997) noted from visits to schools that:

> Last summer (in 1996) a California task force urged the state to spend $11 billion on computers in California in 14 schools, which have struggled for years under funding cuts that have driven academic achievement down to among the lowest levels in the nation. This task force, composed of forty-six teachers, parents, technology experts, and business executives, concluded, "More than any other single measure, computers and network technologies, properly implemented, offer the greatest potential to right what's wrong with our public schools." Other options mentioned in the group's report - reducing class size, improving teachers' salaries and facilities, expanding hours of instruction - were considered less important than putting kids in front of computers. (Oppenheimer, 1997, p.17)

One can see that an emphasis was placed on getting computers into classrooms, but that many other issues were not thought through or that thorough planning was not done. Computers in classrooms were viewed as problem-solvers, yet once classrooms were equipped with computers many other issues arose.

Oppenheimer (1997) observed many schools that cancelled programmes such as physical education and music to allocate time for computers and technology to be used. While many stakeholders in the drive to get computers into schools did not see a problem with this, teachers and others noted that doing away with essential learning areas to accommodate technology was not an effective manner of implementation.
Oppenheimer's (1997) observations clearly note that the aim of equipping classrooms seemed to have been achieved, however while the equipment was visible in classrooms; the learners were not being equipped with a holistic development. Physical education and other lessons were being done away with to accommodate the computer lessons. This does not cater for the holistic development of the child, but rather focuses solely on academic and technological development of the child.

Similar situations have been noted in South Africa (SAIDE, 2000). Whilst many of the teething issues experienced were raised by other countries and we continued to implement in a similar fashion, and therefore it is not surprising that we have similar issues.

Students could receive a substantial benefit, no benefit, or even negative consequences from working with computers in the classroom, depending on how their teachers chose to use technology. Using computers to help students work through complex problems, thus tapping higher-order thinking skills, produced greater benefits than using computers to drill students on a set of routine tasks. The fact that computers were most effective when teachers used them to promote higher-order thinking skills is a huge argument in favour of technology; CEO's of major companies say again and again that they need workers who can come up with creative solutions to complex problems (Wenglinsky, 2006, p.2).

The above could be true for traditional teaching too – teachers who encourage critical thinking and higher-order skills to be used, create a far better 'end-product' than teachers who focus on drilling and routine tasks.

Callister, Thomas and Dunne (in Yelland, 2001, p.12) stated that "if computers are used to import and amplify poor pedagogy, they can do great harm". Yet again these authors are stressing the importance of the teacher being able to use computers properly, and this would require teachers being sufficiently trained, and have the knowledge and confidence to deliver strong lessons that are able to achieve the set outcomes to a variety of learners in the classroom/grade.

Becker (cited in Yelland, 2001, p.8) reported that "although most elementary school students use computers, that use has mainly been occasional and for purposes of lending variety and "enrichment" to the school day, rather than as a central component of teachers' instructional programs".

Becker (cited in Yelland, 2001) plainly states that his observations in schools have been that computers are not being used in the manner in which they were intended. He says that computers were intended to be a "central component" of the teachers' lesson, but upon observations, it was noted that in many schools, computers are simply being used as basic enrichment tools, and only being used occasionally. The evidence that he reported surely supports the ongoing arguments earlier in the paper that computers are not being used properly due to teachers not having the skills and knowledge of how to make best use out of the tools they have been given.

Wenglinsky (2006) continued:

> Most elementary and middle school teachers still lacked training in computer use, and they therefore frequently used computers in the simplest ways – as drilling machines rather than as catalysts for creativity. The challenge for elementary and middle school teachers, then, was to move away from using computers as a kind

> of modern tablet on which students can do their arithmetic and instead use computers to help students solve problems in the content areas of mathematics, science and language arts. (Wenglinsky, 2006, p.4)

Wenglinsky (2006) is in agreement with Oppenheimer (1997) and the other authors that the training of teachers to use the computers to their full potential is imperative if one wants to get the desired results. Without proper training of teachers, implementation of computers into classrooms has proven to be completely ineffective. This costly task should be implemented thoroughly and effectively in order to achieve the desired results.

Elston (2007), who is in agreement with both Wenglinsky (2006) and Oppenheimer (1997) on the above point, sums it up very well. She says “a school is a place of lifelong learning; education is forever evolving and skills need constant updating. ICT is just one area of self-development and the support of colleagues and the ICT Coordinator is essential if staff are going to provide the best provision for children” (Elston, 2007, p.24).

Elston (2007) makes an excellent point that school is a place of continuous learning and constant change. It is often easy to get carried away with the new implementations that happen in schools around the world, but what we as teachers and certainly the people involved making implementation must not lose sight of is that we are in the business of education for the children and we need to ensure that we are “going to provide the best provision for the children” (Elston, 2007, p.24).

I feel that quite often we (teachers and stakeholders in education) get over-excited about new ideas, and that we need to make the effort to stay grounded, and ensure that we completely fulfill our role as teachers, and provide our learners with the best possible education, which is what we have been trained to do. However, in a constantly evolving world, we need to keep up with the changes (such as technology in the classroom), and provide the learners with a quality education and make the best use of the tools we are provided with.

2.5. SUMMARY

Computers are at the forefront of education, and a great deal of emphasis has been placed on computers being used in the classroom. However, in many cases around the world, it has been noted that getting computers into classrooms has been so emphasised that how they are used in the classrooms is overlooked. Teachers having the necessary skills to be able to allow computers to enhance learning and assist them are key to computers in education being a success.

2.6. CONCLUSION

Mohamad and Mohamad Amin(2009) presented the following findings at the International Conference of Teaching and Learning. Their findings were from Malaysia, and specifically related to teaching language.

> The use of computers is fast developing in language learning. Language educationists have been integrating the use of computer in teaching. Educational software is creatively developed to help teaching and learning of English. However, there are many factors that contribute to the effectiveness of the use of computers in language teaching, for instance, the content, the quality of the design, the interactivity, the skills of the teachers as well as of the students and the language acquisition theory integrated with computer-based teaching and learning. It is best to remember that the computer is not a substitution for teachers but rather it is an enabler to help both teachers and students have more opportunities to experience various innovative methods in teaching and learning. (Mohamad and Mohamad, 2009, p.2)

The above quotation certainly clarifies what computers in teaching are able to do and should be doing at a classroom level. Computers give teachers and learners the opportunity to learn through a variety of exciting and novel ways, and to truly enjoy learning and achieve to the best of their ability.

As teachers, we should strive to help each and every one of our learners achieve to the best of their ability. We should be doing this in innovative ways, using the tools we have been given in our classrooms, and around the school.

Jewitt (2008) looks at multimodality in the literacy classroom in America, and how teaching modes have changed over the years. She states that “multimodality offers teachers the potential to reflect on their pedagogic use of the resources of their body, to critique and redesign these aspects of their practice” (Jewitt, 2008, p.243). She is basically saying that since the advent of technology in the classroom, we as teachers have been presented with an opportunity to review how we teach and why we teach in a specific way. We should take this opportunity to evaluate ourselves and our modalities, and access if what we are doing is the best for our desired outcomes.

Surely as teachers our desired outcome is for our learners to achieve their best, and to prepare them for the working world that they will enter in? With technology being at the forefront of the global working place, surely we should adapt our teaching to take this into consideration. Or are we able to still obtain and successfully achieve our outcomes without the use of technology?

3. CHAPTER 3: RESEARCH METHODOLOGY

3.1. INTRODUCTION

The intent of this study was to investigate and compare the teaching of Grammar concepts at a Grade three level using two different teaching methods namely: traditional teaching and computer-based teaching. By conducting this study the researcher gained insight into each teaching method, and attempted to ascertain whether one method was more effective than the other, or if equivalent outcomes could be attained through the use of these teaching methods, specifically for the teaching of Grammar in Grade three.

3.2. RESEARCH DESIGN

This research primarily took a qualitative research approach, using a case study methodology. However, as the results of the learners assessments consisted of numerical results, this formed a quantitative part of the study. Therefore this study was more of a mixed methods approach as opposed to simply a qualitative or quantitative approach.

According to Giddings and Grant (2007):

> The ingredient that is most commonly mixed in mixed methods research is the methods, not the methodologies, and the methods are mixed in the quite specific sense that both qualitative and quantitative ones are used. Because of this, some proponents of mixed methods research argue that this approach represents the 'best of both worlds' usually understood as the two worldviews of positivism / quantitative research and interpretivism / qualitative research. (Giddings and Grant, 2007, p.56)

Case studies in education are often taken on by the researcher in order to attain findings that can be reported back, and hopefully assist to guide or better those involved in the findings. Creswell (2008, p.476) refers to a case study as "an in-depth exploration of a bounded system (e.g., an activity, event, process, or individuals) based on

extensive data collection". This study was conducted over a period of three weeks, and not only the activity of teaching and the learning was used for the study, but the results from their written activities and computer based activities were used to obtain a final conclusion.

> "A case study examines a bounded system, or a case, over time in depth, employing multiple sources of data found in the setting. The case may be a program, an event, an activity, or a set of individuals bounded in time and place. The researcher defines the case and its boundary. A case can be selected because of its uniqueness or used to illustrate an issue."
>
> (Stake,1995)

Stake (1995) demonstrates above that case studies can occur over time (as with this research), and may use more than one source of data (this research uses various sources of data), and that the researcher defines the case and its boundary. Stake (1995) goes on to state that the case may be selected due to its uniqueness or to illustrate an issue. This research was conducted to illustrate an issue that is often brought up at this school (by teachers, HOD's, the principal and parents). The purpose of this study was also to get results that could hopefully advise those involved in teaching this particular subject or using these specific teaching methods, and improve or better the manner in which we teach, in order to attain the best results from our learners.

Shulman (1986, p.12) suggested that "the important test of a case is its contrast with other cases and its examination in the light of principles. Such disciplined evaluation of cases can temper the inappropriate inferences that might be drawn from cases without diminishing their other virtues." This study looked at the difference between the two teaching methods, and ascertained if one or the other produced better results, particularly with regards to Grammar and Grade three learners. Studies have been conducted in comparing traditional teaching and computer based teaching, however many of these studies have been for high school and university students in America or Britain. South Africa is a developing country, and while one can compare results and

statistics from other cases studies, one must bear in mind that South Africa is a very different country, with its own unique background, and our educational system is poles apart from other first world countries.

The importance of this research is that the results of this study can be compared to similar studies that have been conducted globally, and that recommendations from other studies may support the findings of this study. A research that is conducted needs to have a purpose and should attempt to assist those in the field through the findings and recommendations. Case to case generalization should take place, in order for the importance of the study to be noted.

McMillan and Schumacher (2006) note that a distinguishing characteristic of qualitative research is that behaviour is studied as it occurs naturally. There is no manipulation or control of behaviour or settings, nor are there any externally imposed constraints. Rather, the setting is an actual classroom, school, clinic or neighbourhood. This is why qualitative research is often described as field research; it takes place in the field or setting.

Conducting a qualitative research therefore “allows the investigator to interpret and bring to light an understanding of particular subjects and events” that would not necessarily be achieved quantitatively (Leatherman, 2007, p.3).

3.3. POPULATION AND SAMPLING

“A population is a group of elements or cases, whether individuals, objects or events, that conform to specific criteria and to which we intend to generalize the results of the research” (McMillan and Schumacher, 2006, p.129).

The population for this study would be the entire group of Grade 3 learners at the school, consisting of 116 Grade three learners. This group would represent all Grade three learners at similar private schools in the province of Gauteng.

The group of subjects or participants from whom the data are collected is referred to as the sample (McMillan and Schumacher, 2006, p.129). The sample is a representation of the total population.

The sample for this study consisted of forty five learners from two classes (twenty three from one class and twenty two from another class), of mixed races (Africans, Whites, Indians and Coloureds) and both males and females from a Private School in northern Johannesburg. In addition four Grade 3 teachers (colleagues of the researcher), were interviewees and also formed part of this study.

The sample was a convenience sample, which is “a group of subjects selected on the basis of being accessible or expedient” (McMillan and Schumacher, 2006, p.137). As this research was conducted at the school where the researcher works, it certainly is considered a convenience sample.

3.4. INSTRUMENTATION

Class activities and formal assessment tasks were designed to attain results from the learners, according to each teaching method (computer based and traditional). Observation schedules were designed in order for the researcher to take notes during lessons that were taught. Interview questions were planned for the semi-structured interview with the Grade three teachers. A child friendly learner evaluation sheet was designed, in order for the learners to be able to freely express their opinion and views on the two teaching methods that they were exposed to during the study.

(Refer to appendices A-F)

3.5. CREDIBILITY AND TRUSTWORTHINESS

In ensuring credibility, Lather (1991) identified four types of validation of which one is that of “triangulation”. As cited in Creswell (2007, p.208) “in triangulation, researchers make use of multiple and different sources, methods, investigators, and theories to provide corroborating evidence”. This research has used interviews, observations,

learner evaluations and learner results for informal and formal assessments as sources of data collection to ensure credibility. By using numerous sources, it ensures that there are no inconsistencies, and has each source of data collection support the other.

In addition, “member checking” was be used to ensure credibility and trustworthiness which “solicits participants’ views of the credibility of the findings and interpretations” (Creswell, 2007, p.208). In order to achieve this, the transcriptions of the interview held with the Grade three teachers and the results or findings of the study were taken back to the participants for their perusal so that they could appraise the accuracy and credibility. Participants were given the opportunity to withdraw information as well as change any of their responses should they wish to do so.

Further to this, all lessons plans and activities were shown to the Grade three teachers, and approval was asked for from the grade head and HOD, to ensure that the lessons were fair, in line with the curriculum and of an acceptable standard.

Finally, by working with a supervisor, this ensures that the researcher does not make up findings or misinterpret any of the data that was gathered. This is referred to as a “peer review which provides an external check of the research process” (Creswell, 2007, p.208). Guba and Lincoln (1985 as cited in Creswell, 2007, p.208) would refer to the peer reviewer as a “devil’s advocate” in that they ensure the researcher stays honest and that the methods, meanings and interpretations are credible and trustworthy.

3.6. DATA COLLECTION

The data was collected over a period of three weeks. All data was collected from the school where the study was conducted. No data was collected until permission was granted from the principal of the school, and all consent forms from parents / guardians, learners and teachers were collected. A register was kept to ensure that all participants had returned consent forms indicating their willingness to participate in the study.

This study was aimed at investigating the differences between traditional teaching of grammar, and the teaching of grammar using computers in the Foundation Phase. For the purposes of this research, two grammar concepts were taught, namely: adverbs and conjunctions, to two Grade three classes. The first day of teaching involved the researcher teaching the concept of adverbs to the two classes. The two classes were split randomly, taking the form of a quasi-experiment, whereby the same group of learners with the same history of learning are randomly divided into two groups (each group being taught in a different method). Having split the two classes, the researcher now had a group A and a group B. On day one of teaching adverbs, group A was taught in the computer room using the computer-based method, whereby a pre-planned lesson was used and the learners had to complete the lesson and learn about adverbs independently. Group B was then taught about adverbs in the classroom, using the traditional teaching approach, whereby the teacher is in front of the class and explains the concepts, and actively involves the learners, and the learners' partake in activities to reinforce the concept. On this day both groups completed a written class activity. The results of this were used for the purposes of this study.

A few days later, both groups were given an assessment task on adverbs to complete. This involved identifying adverbs, classifying adverbs (into how, when and where) and creating their own adverbs. Therefore, this task was aligned with how an assessment should be presented – some basic tasks, some more complicated tasks, and then a small part of the paper should cater towards applying the skill independently, and possibly a challenge.

The next week the concept of conjunctions was taught. This took a similar form to how Adverbs were taught – concept introduced, and activities completed one day, and an assessment completed a few days later. The only difference was that this time round group A was taught in the traditional method and group B was taught using the computer based method. Once the concept of conjunctions had been taught to both groups, they completed a written class activity, and a few days later an assessment task was completed by all the learners. The assessment task was once again designed in

such a manner that learners were required to identify and then apply their knowledge gained by using their own conjunctions to join sentences.

The table below clarifies how and when each group was taught:

WEEK 1 - ADVERBS		**WEEK 2 - CONJUNCTIONS**	
DAY 1	DAY 2	DAY 1	DAY 2
Group A – Computer Based Group B - Traditional	All groups complete the same written assessment task. (refer to appendixes)	Group A – Traditional Group B – Computer Based	All groups complete the same written assessment task. (refer to appendixes)

It must be noted that both the computer-based and traditional lessons were designed to ensure that the learners understood the concept, and then were able to complete basic activities using the knowledge gained from the lesson. While the computer based lessons required more independence, the researcher was there to facilitate and guide the learners if they needed, but the traditional lessons involved the learners working together as a whole class, in groups and then individually, so more collaboration was able to take place. This sharing of ideas, proved to be valuable to the outcome of their activities.

By this point in the research, each learner had been taught two different grammar concepts (adverbs and conjunctions) in two different teaching methods (computer-based and traditional method), and completed two class activities and two assessment tasks related to each of the above concepts.

Following the assessment task, the learners were asked to complete a learner evaluation. This was a simple evaluation sheet that the learners had to answer questions using a happy face, straight face or sad face (see appendix E). These questions were to ascertain which method of teaching (computer-based or traditional) each learner preferred, which method they felt was most useful to understanding a new

concept, and they were given the opportunity to write a few sentences explaining why they preferred one method over another.

As the researcher has been teaching for ten years using both of these methods, she was considered sufficiently trained and knowledgeable on these two methods to be able to carry out this research. As the researcher taught the lessons to Group A and Group B, using both teaching methods, this ensured as far as possible reliability and fairness of input in relation to results. If another teacher had taught some lessons, other factors such as teaching styles would have had to be considered. Hence, only the researcher teaching all the lessons assisted in ensuring reliability and consistency.

To ensure that lessons and assessments were fair, well structured and comparable, the Grade Head of Grade three and Grade three teachers, and HOD were asked to view lesson plans before they were taught to the learners. This ensured that the level expected of the learners was fair, and that the content covered was aligned with the curriculum. It also ensured that the level of activities and assessments were considered at a similar level to one another, so that the two concepts and their activities / assessments could be considered comparable for the purposes of this study. This is important for research purposes as one does not want other factors to affect the results/outcomes. For example if one assessment task was set by one teacher, and another teacher set the second assessment task, different teaching styles, or manner of asking a question could affect the results of the learners. Therefore by the researcher doing all the planning, teaching, observing, setting of tasks and marking or activities, consistency was maintained.

Changes that were advised by teachers, the Grade Head and HOD were made prior to the teaching of the lessons. This ensured that lessons were relevant, valid and according to our curriculum. It also ensured that the standard of activities and assessment tasks were fair and that all learners were accommodated.

Brantlinger et al (cited in Leatherman, 2007, p.15) note that qualitative research is “not done for a purpose of generalization, but rather to produce evidence based on the exploration of specific context and particular individuals.” This would be true to this

study, as today many people generalize that computer-based teaching is 'the way to go', however, by having conducted this research the researcher gained insight into how effective computer-based teaching and traditional teaching are with regards to Grammar in Grade three, at this particular school.

As I am a Grade three class teacher, having done the research in my classroom ensured that "the behaviour is studied as it occurs naturally". (McMillan et al, 2006, p.321). Foundation Phase learners are extremely impressionable, and having another teacher come to teach them could cause excitement for some, and possibly anxiety for some, and these emotions could result in some learner's concentration and attention being obscured. Therefore, the learners being in their everyday environment and lessons having being taught with their teacher and her manner of teaching, a more genuine result should be the outcome.

As two classes of learners were being investigated and observed for this study, it took the form of a case study. Blanche, Durrheim and Painter (2006) note that case studies are usually descriptive in nature and provide rich longitudinal information about individuals or particular situations. This study only made use of two Grade three classes, being taught two grammar concepts (adverbs and conjunctions) in two methods of teaching (computer-based and traditional).

To further illuminate my research, I conducted interviews with fellow Grade three teachers, and found out their professional opinions and observations regarding the use of traditional teaching methods and computer-based teaching methods.

3.6.1. TEACHING AND OBSERVING

Blanche et al (2006, p.309) note that "observation takes place while things are actually happening, and thus gets you even closer to the action. Because the interpretive approach often emphasizes studying phenomena in a naturalistic way, observation most often takes the form of participant observation, where you as researcher become fully involved in the setting being studied."

As I taught the four lessons (two traditional and two computer-based lessons) to the two Grade three classes, I also observed and recorded their behaviour and interactions during these lessons. While teaching and observing was slightly more complicated than simply observing, being familiar with these learners and having an in depth understanding of their personalities and mannerisms certainly did assist in making the task easier and more accurate. I made notes during the lessons, and also made more in depth notes immediately after the lessons, while the responses were still fresh in my mind.

3.6.2. INTERVIEWS

Further to having taught and observed, I conducted interviews with other Grade three teachers. The reason for doing interviews was to get further information about traditional teaching and computer-based teaching of Grammar from the other Grade three teachers – it would not have been very accurate if I only looked at what happens in my classroom.

Interviews have more strength than a questionnaire as they "identify how people think more openly and accurately" (Wits School of Education, 2011, p.27). With regard to this research, I felt that interviews conducted proved to be more enlightening than what a questionnaire would have been. Having a relationship with my colleagues also meant that an interview where we sit down and chat about the above issues was more personal and appropriate than a questionnaire. Asking them to fill out a written questionnaire would have been impersonal as I teach with these ladies, and know them fairly well.

According to Leedy & Ormrod (2008, p.146), interviews "yield a great deal of useful information", and in this research the interviews strengthened what was observed in the classroom. The interviews took a 'semi-structured' format as the questions were structured, but the interviewees were allowed to and were encouraged to express their experiences and thoughts related to the research topic.

With written permission from the participants, I recorded the interviews and transcribed them verbatim so that they could be used for data analysis.

The format of the questions plays a vital role for the interview as one would like to get as much information related to the study in the time available, without going 'off course' and talking about details that are not relevant to the study. At the same time, one needs to ensure that as the interviewees are giving up of their time and expertise, that they can voice their opinions freely. The use of open-ended questions assisted the participants to "best voice their experiences unconstrained by any perspectives of the researcher or past research findings" (Creswell, 2008, p.225). While it is important that the participant has the opportunity to share their experiences and ideas, Creswell (2008) also notes that at times the participant may respond with answers that they feel the researcher would like to hear. This makes clear how important it is to take time at the beginning of the interview to make the participant(s) feel comfortable and at ease so that the participant(s) are relaxed and can share their experiences openly and honestly. It is of great importance to create a comfortable atmosphere for the interview, and to be courteous and respectful throughout the interview, and to show interest towards the participant(s). One needs to give the participant an opportunity to express their thoughts and feelings in their own manner and not "put words in their mouths" (McMillan and Schumacher, 2009, p.147), and to react appropriately to the participant(s) responses.

3.6.3. ASSESSMENT TASKS – CLASS ACTIVITY AND FORMAL ASSESSMENT

As two concepts (adverbs and conjunctions) were taught (four lessons), each concept was taught in the traditional teaching method and computer based method, these two concepts were then assessed by means of a class activity/informal assessment. As the concept had just been introduced, this class activity/informal assessment was to ascertain how much of an understanding of the new concept each child had gained from the lessons. Following that, a few days later, after the concept had been further reinforced, two assessment tasks were completed by each learner. These assessment tasks were designed in accordance with formal assessment guidelines provided by the school. The assessment tasks were set out in a child friendly manner and assisted in

gaining insight into how much understanding the learners had on adverbs and conjunctions. This task was completed a few days after the lessons or concept had been taught, and they had completed a class activity.

3.6.4. LEARNER EVALUATION

Once the lessons had been taught and the assessment tasks had been completed, the final activity for the learners was to complete an evaluation of the lessons. This evaluation was age appropriate and involved them answering a few questions using the 'happy face, straight face and sad face' options. These questions were worded in a child friendly and age appropriate format. They aimed to ascertain how each learner felt about the lessons, and how well they felt they understood the different grammar concepts taught (adverbs and conjunctions), and which lessons they felt were best. They were also given the opportunity (not compulsory) to write a few sentences describing what they enjoyed or did not enjoy and why.

3.7. DATA ANALYSIS

Data analysis "is the process of bringing order, structure and meaning to the mass of collected data" (de Vos et al, 2006, p.333). The reason that we analyze the data collected is to use the information collected to help answer the research question. It is also a process where information collected is separated into that which can be used to assist in answering the research question, and that which cannot be used. It is unlikely that each and every bit of information collected will be able to assist in answering the research question.

The data collected needed to be analyzed in order for the research to continue and results to be graphed. I transcribed the interviews and coded any trends (positive and negative) that the Grade 3 teachers had noted with the use of these two teaching methods. I did a similar coding exercise with the data collected from observations of the classes and responses given by the learners.

The learners' assessment tasks and learner evaluations form the quantitative part of the research, and I analysed the data and put it into a graph format that is easily understood by the readers.

Data analysis is the method by which raw data is organised and presented to provide meaningful results (Brink et al., 2006, p.170).

An experienced Data Analyst from the school of Public and Development Management and South African Institute of International Affairs at Wits University, Mr Khotso E. Tsotsotso, was consulted and the following process was followed:

A sample of 45 Grade 3 learners was selected from a full population of 116 learners in order to perform a T-test. The sample was further divided into two groups of learners based on each individual child's position on the conventional alphabetical order. Group A and Group B with twenty two and twenty three learners were created.

The two groups were taught the same English literacy topics namely Adverbs and Conjunctions using the two different teaching methods. Group A was taught using the computer-based method first, followed by the traditional teaching method. Group B was taught using the traditional teaching method first, followed by computer-based teaching method. Both groups underwent two sets of testing after each lesson, using an informal class activity, followed a few days later with a formal assessment activity.

The scores of the tests were put in Excel to conduct inferential statistics. The average scores from each teaching method (as explained above) were produced from each set of scores.

The analyst then conducted a "student t-test" for which the test statistic follows a Student's t distribution if the null hypothesis is supported. This test can be used to determine if two sets of data are significantly different from each other, and is applied when the test statistic (learner marks in this case) follows a normal distribution. In this case the test was used to establish the following:

- Whether there is significant difference in the average results of the two groups.
- Whether the traditional method yields results which are significantly higher than computer based methods, as observed from the graphs and vice versa.

3.8. ETHICAL CONSIDERATIONS

According to Leedy & Ormrod (2008, p.101) ethical issues in research fall into four categories, namely “protection from harm; informed consent; right to privacy; and honesty with professional colleagues”.

3.8.1. INTERNAL REVIEW BOARD

This research did not take place until consent had been given by the Ethics Committee of The University of the Witwatersrand. Upon consent from the above committee, and a protocol number being issued, the research began.

3.8.2. RIGHT TO PRIVACY, ANONYMITY AND CONFIDENTIALITY

Before the participants were approached (the learners being taught, their parents/guardians and the Grade three teachers), the principal of the school (a private school in northern Johannesburg) was informed of the purpose of this study, and then asked to sign an acknowledgement and information sheet of the research, thereby granting approval for the research to take place. Thereafter each participant received a letter inviting them to participate in the study, and detailing the nature and duration of the study. Clearly stated on this letter was that participation is completely voluntary and that withdrawal from the study at anytime is allowed and will not have any negative consequences. This letter made note that all personal details collected would remain confidential at all times. Researcher and supervisor details were made available on this letter so that should participants need to contact the researcher during the time of the research they were able to.

3.8.3. INFORMED CONSENT

Letters to the learners were presented in a child friendly format and in language that the learners were able to understand with ease. Therefore letters to learners differed from those sent to the principal and teachers.

Together with the information letter, consent forms were given out, and collected. As learners are in Grade three and under the age of eighteen, consent forms for parent/guardian or caregiver were sent out, and when consent from parents/guardian was given, then each learner was requested to sign a consent form too. Again the learner forms took a more simple and child friendly format. Consent forms for the teacher interviews also had a statement asking for consent of audio –recording.

3.8.4. BENEFICENCE

The ethical principle of beneficence is “the duty to do or to promote good” (Muller, 2002, p.67). The data generated from the study would be reported back to colleagues in Grade three and to the Head of Foundation Phase, with any relevant recommendations.

3.8.5. NON-MALEFICENCE

This principle entails a means of securing the well-being of the participant who has the right to be protected from discomfort and harm (Brink et al., 2012, pp.35-36). The researcher ensured that for the duration of the study, the participants were comfortable, and happy to part take.

3.9. LIMITATIONS

As with every study there are certain limitations. While in the process of teaching lessons and collecting data, I noted that collaboration in the traditional teaching lesson proved to have an important and positive role in understanding the concept. Therefore, for the second set of lessons (conjunctions), I allowed the learners who were taking part in the computer based lessons to be paired up (I tried to pair a strong reader / language

learner with a weaker one), and to chat and share ideas and thoughts on the topic being introduced. This therefore ensured that the results for conjunctions and for the assessment tasks were completely fair, and that collaboration could not be considered as a factor affecting the results presented in later chapters.

Another limitation to this study was that some learners were absent on the day that their group was being taught a new concept, and so they may not have had the topic taught to them. It must be noted that for the two cases that this happened (three learners absent on one day, and one learner absent on another), the assessment task written was not included into the data for the purposes of this research as their assessment tasks would not have been reliable and realistic.

As this research was conducted in the school environment, learners absenteeism is not predictable, and one cannot keep delaying the day research takes place due to one or two learners being absent. Therefore, when situations such as this did arise, that learner was given the opportunity to complete assessment tasks individually on their return to school. However, if they missed out on the introduction of a concept, their tasks were not used in the study. Hence why graphs show an overall percentage, and each day of research did not have the exact same number of learners participating.

The learners at the school where I teach and where the research took place are generally computer literate as we do use computers in our teaching. However, there are some learners who have joined the school during this year, and who are not completely computer literate and do not have computer accessibility at home. These learners therefore experienced a lack of confidence during the computer based lessons, and this lack of confidence could obviously impact the final results, therefore I made the decision to pair them up with a stronger learner who was completely confident on the computer. This ensured that the learners, who were not computer literate, did not have to focus on their incompetencies on the computer, but that they could rather focus on the topics being introduced and enjoy the lessons that were computer based.

An unanticipated limitation to the study was that we were reliant on electricity and computers being fully operational. Unfortunately, during the week that I intended to start

this research, our school experienced a full week without electricity. The fact that this study was reliant on electricity for the computer based lessons meant that the study had to be delayed by a week. Issues with the computers also occurred early the following week, meaning that a few more days delay occurred. These sorts of inconveniences are part of teaching, and as teachers we simply need to adapt and make the most of it.

Dudeney (2007) stated that the teacher should be prepared for unexpected power cuts or technical problems of some other kind. As mentioned above, we need to take many things into consideration when planning and preparing for our lessons. During this research, electricity cuts were an issue, and so another plan was made.

3.10. SUMMARY

The research design is a mixed methods design with a case study (qualitative) and descriptive analysis (numbers, mean, mode, standard deviation) and inferential statistics using the t-test (quantitative) being used. The sample consisted of forty five learners from two Grade three classes, who represented the 116 Grade three learners at this specific school, and other Grade three learners at schools with a similar setting in the northern Johannesburg area. Lessons were taught using traditional and computer-based teaching methods. Further to this, class activities and formal assessments were completed by the learners, and a learner evaluation was completed by them too. Grade three teachers were also interviewed. Reliability, validity and ethical considerations were ensured. The data was analyzed using inferential statistics.

3.11. CONCLUSION

In this chapter, the research methodology pertaining to the research design, population and sample, instrumentation, reliability and validity was explained. The process of data collection and analysis was described. The ethical considerations applicable to the study were clarified.

Chapter 4 will explain the process of data analysis and interpretation of the findings in the research study.

4. CHAPTER 4: DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1. INTRODUCTION

Data analysis is the method by which raw data is organized and presented to provide meaningful results (Brink et al., 2006). The data that is collected needs to be organized and presented in a manner that makes the findings and results easy to understand, and that the results are able to assist in solving the initial problem that was presented.

The data that was collected for this study was as follows:

- Activity results for adverbs (for Group A and B)
- Assessment results for adverbs (for Group A and B)
- Activity results for conjunctions (for Group A and B)
- Assessment results for conjunctions (for Group A and B)
- Learner evaluation sheets (for all learners who took part in the study)
- Teacher interviews – recorded and transcribed

4.2. DATA ANALYSIS

The lessons taught and their associated activities will be discussed:

For the two concepts taught (adverbs and conjunctions), an activity was completed in each lesson. The concept was introduced and explained, following this; the learners had an opportunity to read and do examples in the form of an online game (computer-based) or orally provide adverbs and conjunctions in the form of an oral game (traditional) before they completed a written activity. This activity or task was set so that an initial idea of how much understanding the learners had gained from each lesson could be gauged.

For the concept of **adverbs**, the class activities for both computer-based and traditional took a similar structure; however, the questions being asked were different. The structure was similar so that reliable and fair marks were achieved for the class

activities. The structure of the activities comprised of three sections, each section containing a variety of questions. The first section required the learners to simply identify the adverb by underlining it.

E.g. **An action verb is underlined in each sentence.**
Circle the adverb that describes the verb.

1. My grandpa snored loudly.
2. Chloe played on the beach yesterday.

The second section required the learners to identify the adverbs in a similar manner to that of the first section, but to also classify the adverbs according to how, when and where (this was an important part of the lesson taught).

E.g. **Circle the adverb in each sentence below. At the end of each sentence, tell whether the adverb answers how, when, or where.**

1. Scott carefully finished his homework.
2. We're going to the store today.

The third section required the learners to apply their knowledge of adverbs and insert an appropriate adverb into a sentence.

E.g. **Add an adverb to complete each sentence. Write it on the line.**
A clue inside the brackets will tell you which kind of adverb to use.

1. Jennifer chewed her food (how)_____
2. It was a nice day to eat (where)_____

Therefore, the activity started off with a simple demand, and progressed to applying the knowledge more critically, creating a fair task whereby even the weaker learners should be able to complete the majority of the task, but also catering towards the stronger

learners, and giving them an opportunity to be challenged. This is in accordance with how assessments should be set out to ensure fairness (See example of activity in appendixes).

For the concept of **conjunctions**, the class activities varied slightly for the computer-based group and traditional group. As the topic of conjunctions is a slightly easier concept, the class activities were only split into two sections – identifying the conjunction by circling or underlining it and then placing a suitable conjunction in between two sentences, and making the appropriate changes (for example, capital of second sentence to become a lower case letter once conjunction has been inserted).

E.g. **Re-write the following sentences, using your own suitable conjunction.**

1. Harry is a nasty boy. I do not like him.

_____

2. Sally and Kiara are kind girls. They always share their sweets with others.

_____

As conjunctions is considered a slightly easier grammar concept, the class activity did not have a third section to classify – as conjunctions cannot be classified like adverbs can be classified according to how, when and where.

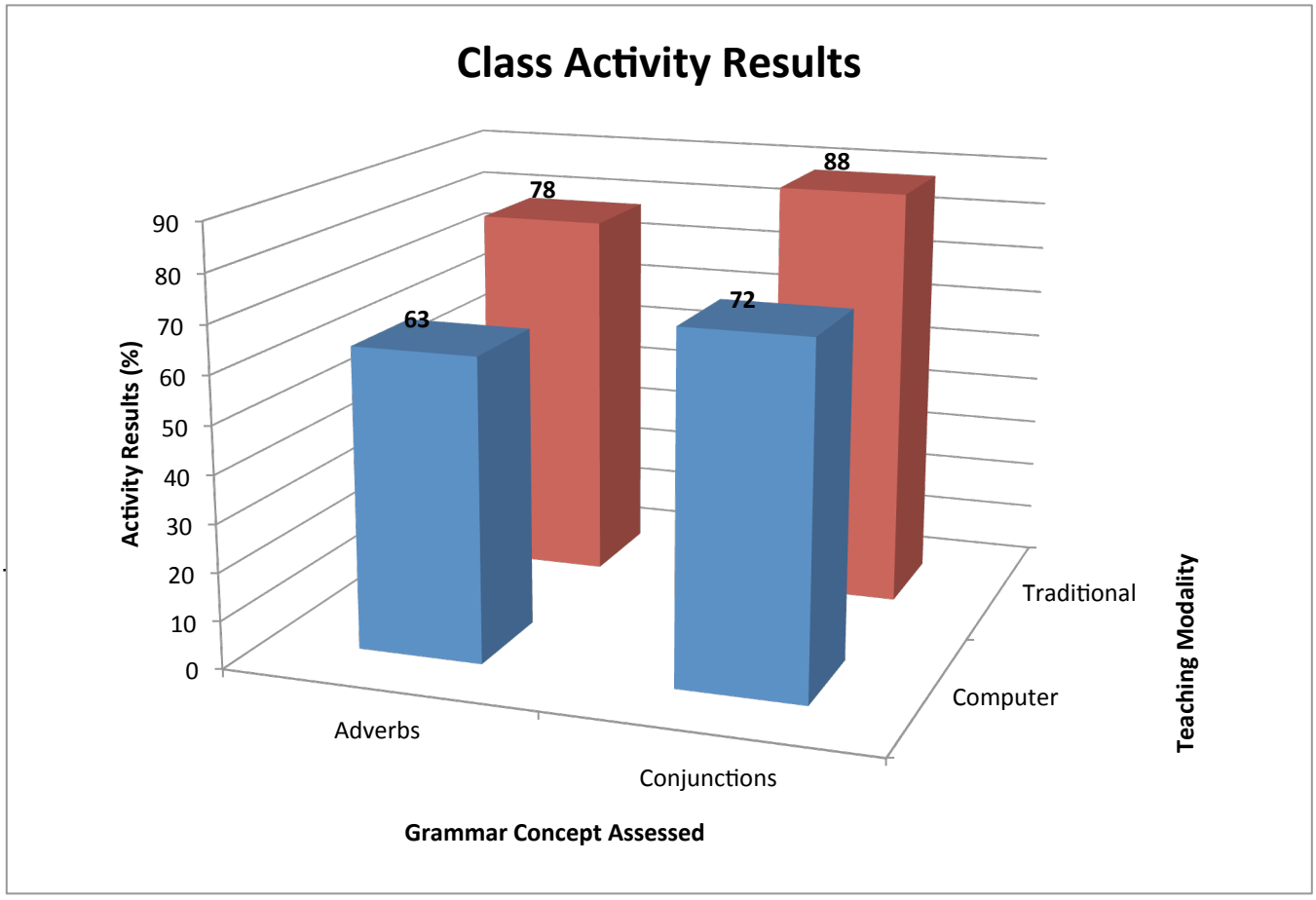
It should be noted that the two grammar concepts taught were selected in accordance with the preparation that the Grade three teachers had made, according to the CAPS document.

To clarify, class activities were done for both adverbs and conjunctions, and results from these activities were used for the purpose of this research. These activities were only completed once each concept had been taught and games/oral activities had been completed in order for the learners to have a good understanding of the concept taught. It would be unfair to have used the results if they had simply been taught and expected to complete activities. They were given the opportunity to use the knowledge gained

from the lesson practically before completing the written task. This is known as constructivism – where knowledge is constructed through a physical process of actually doing a task. Referring to the concrete level of gaining knowledge, which plays a vital role in the Foundation Phase with young learners.

Mondal and Mete (2012) mention that constructivism has two broad interpretations with regards to contemporary educators – psychological constructivism which is articulated by Piaget, and social constructivism associated by Vygotsky.

The results for the class activities are indicated in Graph 1 below:



Graph 1: Class Activity Results

Graph 1 indicates the results of the class activities completed for each concept taught. Firstly it is clear to see that the results for conjunctions are higher than the results for

adverbs. This would be due to factors discussed earlier in the chapter. Secondly it is clear to see that the results for traditional teaching are higher than the results for computer-based teaching. Several factors could have affected this:

When teaching traditionally, it is usually a whole class situation at the start of the lesson, and possibly small groups or pairs later on in the lesson. There is an opportunity to ask questions, to listen to your peers and collaborate. This sharing of ideas has been proven as a huge asset towards learning and gaining knowledge. Not only are learners able to share ideas and ask questions, but they are able to be guided when mistakes are made and to come to an answer through facilitation. While learners were facilitated in the computer-based lesson, quite often with the games or activities, when they selected an incorrect answer they were simply told they were wrong by the computer, there was little opportunity for them to see where and how they made their mistakes and to discuss them and correct them. When working in small groups or pairs in the traditional setting, learners often corrected each other, and the stronger learners often assisted and guided the weaker learners. This collaboration proved to be extremely valuable to the lesson, and certainly to the overall results that were produced.

While collaboration and facilitation were seen as an advantage to the traditional groups, there were advantages for the computer-based groups too. The computer-based learners who were good readers, and had a solid language base coped extremely well in the computer-based lessons, particularly if they had basic computer skills too. These learners managed to complete the tasks, and some managed to complete the challenge tasks (for adverbs writing a poem), and enjoyed the fact that when they had completed tasks to an acceptable standard that they were able to ‘play’ some of the grammar games that links were provided for. However, while this was great for the stronger learners, it was noted that the some of the weaker learners struggled through the lesson as they could not read and understand the concept being taught, and often asked for help. While I was there to facilitate, the computer-based lessons were supposed to be fairly independent, however some learners were simply not able to take that approach to learning. Therefore for the second round of computer-based lessons (conjunctions), I allowed the learners to collaborate, and paired them up - a stronger learner with a

weaker learner, so that if the weaker learner struggled to read, the stronger learner was there to assist them.

One child's results were extremely low for the computer-based tasks (adverbs – first round of computer-based lessons), yet as his teacher I am sure that if the concept had been taught in a traditional manner his results would certainly have been higher. It was noted that this child in particular struggled to read and understand the lesson, and got frustrated as he was not able to complete the activities accurately, resulting in him eventually giving up. Even more, he was extremely irritated that he did not get to 'play' the games at the end of the lesson. However, I am positive that he did not realize that these games were not simply games for entertainment purposes, but that he needed the knowledge on the grammar concept to be able to play the games and enjoy them.

So while the computer lessons appeared to be more entertaining and appealing, they too came with pros and cons. And while the traditional lessons seemed to be less interesting and appealing as this is how the learners are taught for the majority of their school day, they too had their pros and cons. However, the results clearly show that for these lessons taught and the activities completed, traditional teaching produced superior results to that of the computer-based lessons.

Much could be argued around the results:

Were the lessons and activities fair and equally set? The lessons, activities and assessments were set by the researcher. However, to ensure reliability and validity, member checking took place. The other grade three teachers and the HOD of Foundation Phase looked at and assessed the lessons, activities and assessments to ensure that they were fair, of the accepted standard and that they were covering the necessary concepts as outlined in the CAPS document.

Could the learners have collaborated online for the computer based lessons? While online collaboration could have enhanced this particular learning experience, due to the school's bandwidth and internet capabilities, it was not an option that was available. This is a factor that was taken into account, and therefore collaboration in the

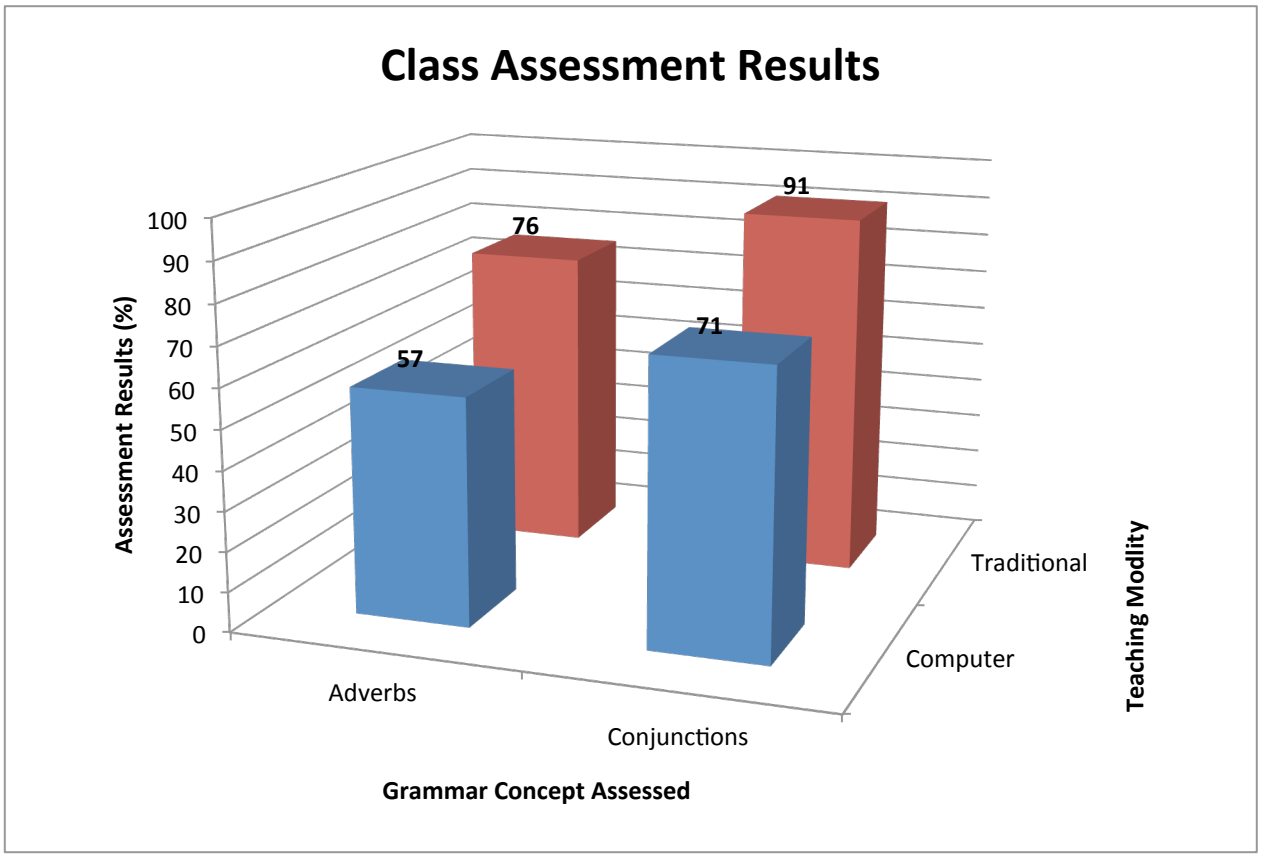
conjunctions lesson was encouraged through the pairing up of a stronger learner with a weaker learner.

The assessment tasks and their associated results will now be discussed:

For **adverbs**, the assessment task took a similar format to that of the class activity. It progressed from identifying the adverb, to classifying the adverb, to applying the skills and providing an adverb according to the classification, (they had to provide a how / when / where adverb for example). Therefore the assessment had three sections, and each section progressed in terms of difficulty, providing a fair platform for all learners. As the learners had completed a similar task earlier in the week, this assessment would be considered fair and one could use the results for reports (this assessment was used for all five grade three classes and their reports).

For **conjunctions**, as with the class activity it only contained two sections – identifying the conjunction and placing a conjunction between two sentences. As conjunctions cannot be classified in the manner that adverbs can be only two sections were appropriate for the assessment task.

The results for the assessment tasks were as indicated in Graph 2 below:



Graph 2: Class Assessment Results

Once again as with the previous results from the class activity, Graph 2 indicates that conjunctions have a far higher result than adverbs. As mentioned earlier in the chapter, conjunctions can be considered an easier and more basic concept that is not as in-depth as adverbs. As this was the case, instructions for the assessment clearly stated that a conjunction cannot be used more than twice in the applying section. This created a more challenging activity, as some learners don't like to think of a variety of conjunctions, and find it far easier to simply place 'and' in the space provided. A few learners did do this, and their results reflected them having not followed instructions. These papers were marked on a stricter level than the class activities. It was intentionally done like this as when then class activity had been done, the topics had only just been introduced, and therefore marking was slightly more lenient. However by the time the assessment tasks were completed, the topics had been introduced, and sufficient practice had been done by the learners for them to have mastered the concepts, and be fairly assessed. These assessment tasks were used for the report or term assessments. While I designed the tasks, the Grade three teachers evaluated them, and changes were made before the final assessment task was agreed upon. As all the Grade three learners were writing this assessment (whether taking part in this study or not), the assessment tasks needed to be approved by the teachers and grade head. This had its advantage towards the study, as it ensured fairness and standardization. It must be noted that all the assessment tasks were written tasks, and they were completed in a whole class testing situation, as all our assessments are completed. This ensured that the learners were not placed under any extra stress, but that the same environment was created, also assisting in attaining fair and realistic results.

The assessment results show similar findings to that of the class activity – that the results for the traditional teaching are higher than the results for the computer-based lessons.

Once again there are many factors that could support these results. Collaboration cannot be considered a factor for the assessment results, as during the assessment tasks, learners were treated and expected to behave in accordance with all formal assessment tasks – to complete the task as if it were a test situation. Each learner was in their own class with their class teacher, and they were at their desks, with dividers placed between them and their desk partner to ensure privacy of their work. As with test or assessment situations, learners are required to complete the tasks to their best ability without assistance from their teacher, or peers for that matter. This means that assessment results are based purely on each individual's completion of the task, and the learners using their knowledge gained from the lessons (traditional or computer-based) and class activities to complete the assessment.

As I only had my class for the assessment, I ensured that my colleague understood the importance of applying the formal assessment situation and followed through with this.

The fairness and validity of the assessment task cannot be considered as a factor that affected the results. This is due to the fact that as mentioned earlier, the assessment tasks were looked at and constructively criticized by all the Grade 3 teachers and changes were made accordingly. The assessment tasks set were then used not only for the purposes of this study, but also for the Grade three assessments and reports. By teaching concepts that formed part of our curriculum, and the CAPS document, this ensured that the concepts were fair and valid to the Grade three learners being taught, and assisted in creating standardization and equality amount the different classes in the grade.

4.3. T-TEST

In order to analyze the data statistically, a t-test was performed by a qualified statistician.

The results of the class activities and the assessments were analyzed using a simple Student T – statistical test to first, test for significant difference in the result means of the two groups. And then secondly, the very same test was used to test whether the traditional method yields results which are significantly higher than computer-based methods.

The T-Test for Significance Difference

This test aims to test whether there is a significant difference between traditional teaching methods and computer-based methods.

Before conducting the t-test, the following assumptions have been made:

The population of Grade 3 learner results is Normally Distributed

The population has a mean zero ($\mu = 0$)

This is particularly important; we are assuming that our test is controlled for major variation within each of the two sub-samples. Because of this assumption, we will be comfortable with our conclusion, notwithstanding the possibility that the results are potentially different due to other reasons besides the different teaching methods. This is simply saying that, all learners belong to the same population, and naturally there should be no difference in the attributes of this population if the whole population is exposed to the same method of teaching.

And a constant standard deviation (δ)

The Hypothesis Number 1

Our null hypothesis is that there is no difference in the mean results of the two groups i.e. there is no difference in results yielded by traditional methods and results yielded by computer-based methods.

In symbols:

H_0: $\mu_A - \mu_B = 0$

Which simply says: the null hypothesis (H_0) states that the natural mean of results obtained through traditional teaching methods and the mean results of marks obtained through computer-based methods are the same. So, there is no difference.

If our null hypothesis fails, we will reject it in favour of the alternative hypothesis:

H_1: $\mu_A - \mu_B \neq 0$

The alternative hypothesis states that there is a statistically significant difference between the two means, and therefore the results yielded by traditional teaching methods is different from results yielded by computer-based methods.

Confidence/Significant level α

We are conducting this test at the 95% confidence level, therefore, the significance level is

$\alpha = 0,05$

Whatever the conclusion of the test will be, we will be 95% confident that we followed the right process. Or, put differently, if we follow the same process, we will make the same conclusion 95 times out of every 100 trials.

The Hypothesis Number 2

Our null hypothesis is that there is no difference in the mean results of the two groups i.e. there is no difference in results yielded by traditional methods and results yielded by computer-based methods.

In symbols:

H_0: $\mu_A - \mu_B = 0$

Which simply says: the null hypothesis (H_0) states that the natural mean of results obtained through traditional teaching methods and the mean results of marks obtained through computer-based methods are the same. So, there is no difference.

If our null hypothesis fails, we will reject it in favour of the alternative hypothesis:

H_1: $\mu_A - \mu_B > 0$

The alternative hypothesis states that there is statistically significant evidence that result yielded by traditional methods are higher than results yielded by computer based methods.

Confidence/Significant level α

We are conducting this test at the 95% confidence level, therefore, the significance level is

$\alpha = 0,05$

Whatever the conclusion of the test will be, we will be 95% confident that we followed the right process. Or, put differently, if we follow the same process, we will make the same conclusion 95 times out of every 100 trials.

Test results

Table 1: Class Activity for Adverbs

	Computer Adverbs	Traditional Adverbs
Mean	63,52173913	77,6
Variance	189,9881423	80,77894737
Observations	23	20
Pooled Variance	139,3790032	
Hypothesized Mean Difference	0	
df	41	
t Stat	-3,900273115	
P(T<=t) one-tail	0,000174675	
t Critical one-tail	1,682878002	
P(T<=t) two-tail	0,000349351	
t Critical two-tail	2,01954097	

Table 2: Class Activity for Conjunctions

	Computer Conjunctions	Traditional Conjunctions
Mean	72,47619048	87,5
Variance	69,46190476	67,42105263
Observations	21	20
Pooled Variance	68,46764347	
Hypothesized Mean Difference	0	
df	39	
t Stat	-5,811257175	
P(T<=t) one-tail	4,73589E-07	
t Critical one-tail	1,684875122	
P(T<=t) two-tail	9,47178E-07	
t Critical two-tail	2,02269092	

Table 3: Assessment for Adverbs

	Computer Adverbs	Traditional Adverbs
Mean	56,68181818	76,375
Variance	195,1796537	149,6546053
Observations	22	20
Pooled Variance	173,5552557	
Hypothesized Mean Difference	0	
df	40	
t Stat	-4,83836579	
P(T<=t) one-tail	9,89469E-06	
t Critical one-tail	1,683851013	
P(T<=t) two-tail	1,97894E-05	
t Critical two-tail	2,02107539	

Table 4: Assessment for Conjunctions

	Computer Conjunctions	Traditional Conjunctions
Mean	70,77380952	90,13157895
Variance	154,7619048	183,6622807
Observations	21	19
Pooled Variance	168,4515565	
Hypothesized Mean Difference	0	
df	38	
t Stat	-4,710578555	
P(T<=t) one-tail	1,63242E-05	
t Critical one-tail	1,68595446	
P(T<=t) two-tail	3,26485E-05	
t Critical two-tail	2,024394164	

From the four tables, the following was observed in the two hypotheses respectively:

Hypothesis Number 1

H_0: $\mu_A - \mu_B = 0$

H_1: $\mu_A - \mu_B \neq 0$

Assessment test

P(T<t) = 1,97894E-05< 0,05; reject H_0,

P(T<t) = 1,97894E-05< 0,05; reject H_0,

Therefore, we accept the alternative Hypothesis.

Class Activity

P(T<t) = 9,47178E-07< 0,05; reject H_0,

P(T<t) = 0,000349351<0,05; reject H_0,

Therefore, we accept the alternative Hypothesis.

It has been concluded that the results yielded by traditional teaching methods are different from those yielded by computer-based methods. We are confident that we will always get to this conclusion 95% of the time.

Hypothesis Number 2

H_0: $\mu_A - \mu_B = 0$

H_1: $\mu_A - \mu_B > 0$

Assessment test

P(T<t) = 1,63242E-05< 0,05; reject H_0,

P(T<t) = 9,89469E-06< 0,05; reject H_0,

Therefore, we accept the alternative Hypothesis.

Class Activity

P(T<t) = 4,73589E-07< 0,05; reject H_0,

P(T<t) = 0,000174675<0,05; reject H_0,

Therefore, we accept the alternative Hypothesis.

It was concluded that the results yielded by traditional teaching are significantly higher than those yielded by computer-based methods. We are confident that we will always get to this conclusion 95% of the time.

Final Conclusion from the t-test

We are 95% confident that traditional teaching methods yield superior results in learners of Grade three when compared to computer-based methods, when teaching grammar.

The T-test also shows that learners tend to vary a lot more when exposed to computer - based method than when exposed to traditional methods. This is not surprising since intuitively all learners have ears and verbal capabilities and are familiar with human interaction. On the other hand, not all learners can familiarise themselves with computers.

4.4. LEARNER EVALUATIONS

Learner evaluations were completed, in order to get an idea of how the learners felt about the different teaching modalities, and if they had a preference towards one or the other and why.

The learner evaluation was completed by all learners who took part in the study. It was completed at the end of the study, and therefore required the learners to think about the various lessons and tasks, and to reflect honestly on the way they felt about it. The learners were encouraged to be open and honest, and to answer truthfully. The learner evaluation consisted of a variety of questions that had to be answered using the happy face, straight face or sad face method. This was done intentionally so that it was age

appropriate, and so that weak learners were not threatened by long questions requiring long answers, which would probably result in answers that were rushed and not 100% truthful. However, the learners were given an opportunity to volunteer further information they felt relevant to the study. As this was not expected, many learners simply handed in their evaluation having completed only the ‘faces’ section. A handful of learners did write a few sentences about how they felt about the lessons and why. Some of the learners, who wrote sentences, simply repeated what was completed in ‘faces’ section.

An example of the learner evaluation questions (see full evaluation in appendices):

1. I enjoyed the computer lessons more than the teacher lessons.
2. I enjoyed the teacher lessons more than the computer lessons
3. I understand what an adverb is and how to use it
4. I understand what a conjunction is and how to use it
5. I would like to learn more using the computers
6. I learnt more on the computers than I did with my teacher
7. I learnt more with my teacher than I did on the computers

From the learner evaluation form (see appendix E), it is clear to see that this was a simple activity to gain insight into the learners’ feelings about the lessons. This was not intended to be threatening or challenging to the learners, hence why I chose to leave the final sections as an option to complete or leave blank.

Before the learners completed this, they were encouraged to do so on their own, and to be honest. I chose not to have them complete this in a test like situation, as I wanted them to feel comfortable and free to be honest and open. I felt that if they were placed in a test situation (barriers between them and silence), that this would have affected the results from being totally sincere.

What was revealed from the learner evaluation results was that the learners enjoyed all the lessons and felt that they gained a clear understanding of the concepts taught. However from some individual results seen this was not always the case. A few learners did answer that they did not understand adverbs clearly. What was interesting to note, I

looked at the five learners who said that they did not understand adverbs clearly, and four of them were taught adverbs during the computer based lesson, and of these four learners, three of them are considered to be below average in terms of their English/language capabilities. This clearly indicates that these learners needed more teacher based guidance and clarification, and that a computer based lesson that required them to read or listen and understand is not sufficient if their reading, listening or language skills are not at the required level.

No learners said that they did not understand conjunctions clearly, which clarifies that conjunctions is an easier or less complicated concept for the learners to grasp. With conjunctions you need to find a suitable conjunction, insert it and apply the rules. However, with adverbs you need to think of a suitable adverb, and ensure that it makes sense and provides the reader with the required detail (how, where or when), and there are no rules to make it simple like there are with conjunctions.

The majority of the learners (67%) said that they enjoyed the computer lessons more than the teacher/traditional lessons. This could be due to the fact that learning an actual concept on the computers was a bit of a novelty to them. Whilst we do use computers to teach concepts, more often than not the computer lessons are used to reinforce a concept as opposed to actually introducing a concept. Again, this introduction of a concept that involved a large amount of reading with understanding and a good comprehension level, is where the difficulties arose. Had the concepts both been taught traditionally and then computers used simply for the reinforcement of the topic through games and other activities, the results of the final assessment could have been very different.

While enjoyment was rated in the learner evaluation and the majority enjoyed learning on the computers more, the actual results of the activities and assessments and how the learners did actually learn best is at the heart of the study. It is interesting, and important for feedback (to the Grade 3 colleagues and HOD) to see what the learners enjoyed most and how they felt, but at the end of the day our aim as teachers is to get the best results, and that involves providing them with the best modality for them to learn and perform.

4.5. SEMI-STRUCTURED INTERVIEWS WITH TEACHERS

The teacher interviews and their associated findings will now be discussed:

A group interview with my four Grade three colleagues was conducted one afternoon after school. The purpose of this interview was to gain insight into their professional observations and opinions regarding the two teaching modalities, and to ascertain if they felt that one or the other created better results from the learners, and why they thought this was so. I chose to do an interview as opposed to a questionnaire as I felt that this would create more discussion, and assist in finding out the teachers' true attitudes and opinions towards the two teaching methods. The interview was purposively done in a group, as I felt that all four teachers together would listen to each other, and either argue that they find it different in their classroom, or agree and expand on reasons why they have these findings. Also, the teachers work well together, and respect each other's opinions, yet they are happy to say if they had different perceptions. The interview was conducted in a casual manner, as these are my colleagues, and my colleagues were encouraged to be relaxed and to be honest in what outcomes they have observed in their own classrooms.

This was a semi-structured interview, as the questions were structured and thought out before hand, however the participants were allowed to and encouraged to express their views and feelings related to the topic of research. The participants were also encouraged to respond honestly and openly, even if they felt that it may not be what the researcher wanted to hear. Ensuring them before the interview formally started that they may give their opinions, express their viewpoints, be it positive or negative, did assist in attaining an open and honest discussion.

After giving a brief outline of what my research entails, and how I have conducted the research, I began the interview questions.

For the purposes of this research I have named the teachers as follows:

Teacher 1 – is the teacher who is 59 years old

Teacher 2 – is the teacher who is 49 years old

Teacher 3 – is the teacher who is 34 years old

Teacher 4 – is the teacher who is 29 years old

The first question that was asked was which teaching method do they prefer – traditional or computer based and why. What was very interesting to note, was that the two older ladies (58 years and 49 years) immediately said that they prefer teaching traditionally as this is how they had been teaching for years, and was what they were comfortable with. They also felt that teaching in this manner gained the best results. This led me to ask them if they do teach using computers, and do they enjoy it. Teacher 1 said outright – no, as she thinks they are a hassle and she is not very good on the computer. She is able to do basic tasks on the computer, but will usually share computer-based resources from her younger colleagues as she feels they are better at designing lessons on computers. I then asked her if she wants to be good at designing lessons on the computer, and she responded strongly no. She said she feels that as she is close to retirement there is no point as she gets good results from teaching traditionally, and to learn how to properly operate and plan lessons on the computer is far too stressful for her at this stage in her career.

While I have learnt so many things from this particular colleague as she has so many years of teaching experience behind her, I had to ensure that I did not express my views towards her answer above, as I wanted honest views for the purpose of the research. I feel strongly that we as teachers should adapt to the times, and with the technology driven world we are in, we need to be incorporating technology into teaching.

Teacher 3 and Teacher 4 said that they used computers in their teaching, and that they see how the learners benefit from these lessons, and how the learners enjoy working on the computers. They did both however, mentioned that they think that they are not using computers as a teaching tool, but rather as a drilling or revision tool – to go over taught concepts and reinforce them. I then asked Teacher 1 and Teacher 2 how they felt about

the other teachers response, and they both said that they thought that using computers for this was a good idea, and they did not have any issues with this.

Through the discussion the two younger teachers answered my second question (How would you like to change your use of computers in teaching?), and lead me into my third question:

Do you think that there is a need for training in the use of computers at this school, or do you feel that you have sufficient knowledge and skills to use the tools that are available to you?

Teacher 1 expressed again her feeling that as her career is almost over; she does not feel that she needs the added stress of learning this new tool. She also stressed that her teaching method has been successful for her 36 years of teaching, and that she continues to produce learners who have achieved the required outcomes in accordance with the CAPS document.

Teacher 2 said she can relate to Teacher 1's feelings and views, but said that as she has a good decade left in teaching, she feels that she is going to have to "get her head around the idea of using computers as a teaching tool, and adapt."

The two younger teachers (Teacher 3 and Teacher 4) said that they feel fairly confident that they are using computers well in the classroom, but that more training and some new ideas would be beneficial to them, their teaching and their students. Teacher 4 stressed that the students are the reason they educate, and that one should adapt to their world and their needs.

The next question was: How do you think your school could better themselves in terms of computer-based teaching?

Teacher 1 said that she feels that the school has already changed so much in the time that she has been teaching there (14 years) and that if they keep on changing, then the learners would not be able to keep up.

Teacher 2 said that she feels the school has adapted well with the changes from around the world, and feels that they are a “cutting edge school”.

Teacher 3 said that she feels that the school does make an effort to be up to date in term of technology, but she does feel that they could use more of their budget to go towards more “top of the range” technology, like interactive whiteboards or iPads.

Teacher 4 fully agreed with Teacher 3, but was more adamant that more of an effort could be made towards keeping the school at the top end of the scale in terms of technology. She said that having laptops and projectors in the classrooms was great, but that as the computer room / computer lesson was the only opportunity the learners got to use technology, she believes that more technology in the classroom would be greatly beneficial towards the learners and their learning.

This made me ask a question that was not planned, but that I felt would be beneficial to the research. Do all teachers use the computer room, and are all learners fairly exposed to computers at this school?

The answer from all four teachers was that the younger/technologically advanced teachers took advantage of the computers available and used the computers in a way that expanded the learners and enhanced their learning. Quite often these teachers would collaborate and share ideas too. However, the other teachers quite often used the computer centre as a ‘free’ lesson where the learners could play games (educational or not) that were available, and this allowed the teacher to mark books, and to ‘prove’ that her learners had been to computers that week as they had logged onto the computers.

This led to another unplanned question. Do these teachers who use the computers not feel that they are disadvantaging their learners?

What came from this question was that these teachers who use the computer room as a ‘babysitter’ do not seem concerned, as they are confident that they are covering the curriculum at a high standard within their classrooms.

4.6. SUMMARY

The data collected showed that at this particular school and in the manner that computers are used as computer-based teaching, that traditional teaching methods attain superior results, with regards to the given grammar topics in the Grade 3 classes.

4.7. CONCLUSION

From the data collected and analysed, it can be concluded that at this particular private school, traditional teaching is a superior method of teaching to computer-based teaching, for grammar in Grade three.

In Chapter 5, the findings will be concluded according to the objectives of the study. Based on the findings from this study, recommendations will be suggested.

5. CHAPTER 5: FINDINGS AND CONCLUSION

5.1. INTRODUCTION

The aim of this study was to explore and describe the traditional teaching method and the computer-based teaching method of Grammar in Grade three, and to see if one method proved to be superior at the school where research took place, with regards to results produced, learner satisfaction and teacher preferences. In this chapter, conclusions on the results reported in the previous chapter are presented. Recommendations based on the study results and suggestions for future research are proposed.

5.2. CONCLUSIONS

In this section, the conclusion of the study are outlined and discussed according to the objectives of the study.

5.2.1. OBJECTIVES OF THE STUDY

The objectives of the study were to:

5.2.1.1. Investigate the traditional teaching and computer-based teaching modalities used for teaching Grammar in Grade Three at this particular school.

The traditional and computer-based teaching modalities were investigated with regards to teaching Grammar in Grade three at this particular school, (a private school in northern Johannesburg). While the traditional teaching methods from all five Grade three teachers are similar in method, the manner in which computer-based teaching occurs at this school shows a wide variety of use of computers. Some teachers use the computer to ‘teach’ – that is to present a new concept and assist in imparting knowledge, (through well planned and designed lessons), while other teachers simply use computers as a drill or reinforcement tool or even a play tool/babysitter.

5.2.1.2. Explore the learners' results for class activities and formal assessments

From the data collected over the four lessons taught and the assessments, it is quite clear that for the grammar concepts chosen and the Grade three age group that traditional teaching was considered to be a superior modality in comparison to computer-based teaching. The results gained from class activities completed and grade assessment tasks clearly show that the traditional teaching modality appeared to introduce and clarify a concept well, and a deeper understanding was attained by the learners.

5.2.1.3. Examine how learners feel about the two methods of teaching, if they have preferences and why

The learner evaluations that were completed, gave a deeper insight into this research. While conclusions can be drawn from the results of activities and assessments, the beliefs and attitudes of the learners towards these two teaching methods play a vital role to the research.

The learner's evaluations showed that the learners enjoyed the computer-based lessons more than the traditional lessons. This is probably due to the fact that half of the learners (one class) was not used to having computer-based lessons, but rather used to playing on computers or doing repetitive, drill exercises. The evaluations did however indicate that the learners who struggle with reading and listening or working independently, did not enjoy the computer lessons as much as the traditional lessons. This could be that they found the reading/listening tasks too difficult, and that the traditional teaching methods that they are more familiar with offer them more assistance and give them a sense of comfort.

5.2.1.4. Describe the teachers' beliefs about the teaching methods, and if they believe that one method is able to attain better results.

As the four Grade three teachers interviewed ranged in age and teaching experience, this gave a good sample for the interview.

5.3. RECOMMENDATIONS

5.3.1. TEACHER TRAINING

The teacher interviews brought light to the fact that there are teachers in Grade 3, and in other grades at the school who are not skilled on computers, and who are not confident enough to use them in their teaching. This means that while some learners are receiving computer-based lessons, others are not. These learners access to computers is simply for drill/reinforcement type exercises. The recommendation to this particular school is to ensure all staff are sufficiently trained to be able to use the technology that is available to them best to enhance teaching and learning.

5.3.2. AVAILABILITY OF COMPUTERS IN CLASSROOMS

While there is only one computer room for many classes across the Foundation Phase, this inhibits teachers who want to use computers successfully towards their teaching, as they are only allocated a specific amount of time per week. A suggestion would be to get more computers, or even get a small amount of computers in each classroom so that they can be used with small groups to enhance the teaching and learning process.

5.3.3. INTERNET ACCESS

The internet access at this school is not as reliable as it should be. It does affect lessons (for example the games in the adverbs lessons required internet connection), and it is suggested that the internet connection and speed is looked at in order for computer-based lessons to achieve their maximum potential.

5.4. CONCLUSIONS

In this chapter the results of this study were discussed according to the objectives of the study. The aim of the study was to explore and describe the traditional and computer-based teaching methods of Grammar in Grade three, and to establish if one method proved to be superior in terms of results, learner satisfaction / evaluation and teacher preferences.

The findings from this research suggest that traditional teaching is superior to computer-based teaching for grammar taught at a Grade three level. The findings are related to the school where the research took place, and with the resources that they have. It appears that the teaching of Grammar at this age is better done in a traditional method as opposed to a computer-based method. What was noted, and is important, is that learners, who struggle with reading, struggled with a concept being introduced / taught in a computer-based manner where they had to work individually. However, being placed in pairs and learner collaboration is a good way to overcome this hurdle.

However, that is not to say that computer-based teaching is not a successful method of teaching. In this instance, the traditional method of teaching proved to be better, at this particular school, and in the manner that the teachers there use computer-based teaching.

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7. APPENDICES

7.1. APPENDIX A

ADVERBS CLASS ACTIVITY:

A. All The words below are adverbs. Put each adverb under the correct heading.

Yesterday	happily	hastily	well	inside	nearby
Tomorrow	later	never	there	always	easily

How

_____ _____ _____ _____

When

_____ _____ _____ _____

_____

Where

_____ _____ _____ _____

B. Fill in the blanks with a suitable adverb from below:

Quietly slowly angrily noisily quickly loudly

1. The lion roared _____
2. I am tired. Let's walk _____
3. I woke up because the phone rang _____
4. She does not complain about the food. She eats _____
5. The children are reading _____
6. I cannot catch him. He runs _____

C. Finish these sentences with adverbs of your own. The question words in brackets will help you.

1. The big man laughed _____ (how?)
2. The dog slept _____ (where?)
3. The lion ran _____ (how?)
4. The baby cried _____ (when?)
5. The boy played _____ (where?)
6. I'll do my homework _____ (when?)

7.2. APPENDIX B

GRADE 3 ADVERBS ASSESSMENT **September 2013**

Name:_____ **Class:**_____

An action verb is underlined in each sentence.

Circle the adverb that describes the verb.

1. My grandpa snored loudly.
2. Chloe played on the beach yesterday.
3. I will visit my friend tomorrow.
4. George, will you come here?
5. My sheepdog sat lazily in the pool.
6. Neil slowly placed a card on the card house.

Circle the adverb in each sentence below. At the end of each sentence, tell whether the adverb answers how, when, or where.

1. Scott carefully finished his homework.
2. We're going to the store today.
3. The energetic dog ran away.
4. The noisy helicopter was flying high in the sky.
5. The young girl and her partner danced gracefully.
6. We often eat dinner with our friends.
7. He cleaned the carpet inside the house.
8. My cousin is never afraid.
9. They recently moved into our neighborhood.
10. My mom and dad are happily married.

Add an adverb to complete each sentence. Write it on the line.

A clue inside the brackets will tell you which kind of adverb to use.

1. Jennifer chewed her food (how) _____
2. It was a nice day to eat (where) _____
3. We're going to the restaurant (when) _____
4. I hope we will get a table (when) _____
5. The waiter walked to our table (how) _____
6. The busboy carried the tray (how) _____
7. I hope we are able to eat here (when) _____
8. Our friends asked us to sit (where) _____
9. For my birthday, the staff sang (how) _____
10. The old man ate by himself (when) _____
11. The restaurant owner was dressed (how) _____
12. The bill for our food arrived (when) _____
13. After the meal, my friend yawned (how) _____

Well done on completing your Adverbs Assessment!

7.3. APPENDIX C

CONJUNCTIONS CLASS ACTIVITY

Describe in your own words what a conjunction is:

_____

_____

_____

_____

Give 5 examples of words that can be used as a conjunction:

1. _____
2. _____
3. _____
4. _____
5. _____

Below are some conjunctions. Choose a conjunction that would work well in the sentences below, and re-write the sentence on the line provided. Remember to read your sentence and check that it makes sense.

Because who and when while

1. Sam and John ate popcorn and drank slush puppie. They watched a movie.

   _____

2. Mary saw the life saver at the beach. He saved the boy from drowning yesterday.

   _____

3. We met a friend at church. Her name was Anne.

_____

4. At the shops there were lots of people. There was a sale on.

_____

5. The child screamed. She saw a big spider coming towards her.

_____

Re-write the following sentences, using your own suitable conjunction.

1. Harry is a nasty boy. I do not like him.

_____

2. Sally and Kiara are kind girls. They always share their sweets with others.

_____

3. Tom was sweating. He played two games of squash.

_____

4. Clare sent a letter in the post. It got lost, and never reached her friend.

_____

5. The sun was shining and it was very hot. It was Summer.

_____

7.4. APPENDIX D

GRADE 3 CONJUNCTIONS ASSESSMENT **September 2013**

Name: **Class:**

Circle the correct answer.

A conjunction is a:

a) word that describes a noun
b) word that joins two sentences together
c) word that tells us what the action in the sentence is

Circle the conjunction in each sentence below.

1) Kerry is getting big and strong because she eats all her food.
2) The boys were soaking wet and they got into trouble.
3) Sandy and Amanda went inside when it started to rain.
4) Brian went to buy milk at the shops as he has finished all the milk at home.
5) Matthew saw the aeroplane when it crashed into the park near his house.

Re-write the sentences using a conjunction. Make sure your sentence makes sense. You may not use the same conjunction twice.

1. Peter built a dolls house. It was big.

_____

2. Sarah was hot. She decided to have a swim.

_____

3. Mom paid the butcher. She put the meat in her basket.

_____

4. Henry and Harry are twins. They look alike.

_____

5. Dad burnt his hand on the stove. The stove was very hot.

_____

Well done on completing your Conjunctions Assessment!

7.5. APPENDIX E

LEARNER EVALUATION:

			
1. I enjoyed the computer lessons more than the teacher lessons			
2. I enjoyed the teacher lessons more than the computer lessons			
3. I understand what an adverb is and how to use it			
4. I understand what a conjunction is and how to use it			
5. I would like to learn more using the computers			
6. I learnt more on the computers than I did with my teacher			
7. I learnt more with my teacher than I did on the computers			

If you would like to, please write a few sentences about the lessons completed for the study. You may say what you liked, what you did not like, what you would like to have done, or how you would change the lessons.

_____

_____

_____

_____

Thank you for completing the learner evaluation!

7.6. APPENDIX F

INTERVIEW SCHEDULE FOR SEMI-STRUCTURED INTERVIEW: (4 TEACHERS)

Teacher's Biographical Information

Age: _____

Sex: _____

Qualification (type): _____

From (institution): _____

Obtained (year): _____

Number of years teaching in the Foundation Phase:

_____

For which period (eg. 1995 to 2012):

_____

Type of school where currently teaching: _____

In what types of schools have other years of teaching been spent, if total years in teaching not all done at current school:

_____

_____

Number of children in the class: Girls _____ Boys _____

QUESTIONS FOR SEMI-STRUCTURED INTERVIEW:

1. Which method of teaching do you prefer (traditional or computer-based) and why?
2. How would you like to change your use of computers in teaching?
3. Do you think that there is a need for training in the use of computers at this school, or do you feel that you have sufficient knowledge and skills to use the tools that are available to you?
4. How do you think your school could better themselves in terms of computer-based teaching?
5. Do all teachers use the computer room, and are all learners fairly exposed to computers at this school?
6. Do these teachers who use the computers not feel that they are disadvantaging their learners?

7.7. APPENDIX G
LETTER TO THE PRINCIPAL

19 August 2013

Dear Sir

As you know, I am in the process of completing my Masters degree in the School of Education at the University of the Witwatersrand. As part of my degree I am doing research on various methods of teaching used in Grade Three, my research is entitled *Traditional Teaching and Computer Based Teaching of Grammar in Grade Three.* My research aims to see if one of the above methods is more effective in the Grade Three classroom, and to ascertain learner's preferences towards the two teaching methods.

My research involves me teaching lessons to my current class of Grade Three learners, using the two teaching methods stated above (traditional teaching and computer based teaching). I intend to teach Grammar lessons that are aligned with our curriculum so as to create as little disruption as possible, and to continue with our planned lessons and assessments. Once the lessons have been taught (four grammar lessons), the learners will complete two assessment tasks and an evaluation.

Further to teaching and observing lessons, I would like to conduct an interview with my Grade Three colleagues. This semi-structured interview will take place after the research lessons have taken place, towards the end of term three, at a time that is convenient for the Grade Three teachers. The interview will take approximately one hour. This type of interview allows for additional questions to be posed based on the teacher's responses rather than needing to strictly adhere to a set of pre-planned questions, so allowing for more detail and depth in responses.

The reason why I have chosen your school is because as a teacher at the school, I would like to ascertain whether one of the methods is more effective, and if so report to my colleagues and HOD.

I would really appreciate your permission to conduct this research with my current class of Grade Three learners, and my fellow Grade Three teachers.

The intention of this letter is to seek your permission in this regard.

Please note that participation in this study is completely voluntary. The research participants will not be advantaged or disadvantaged in any way should they choose to participate or not. They will be reassured that they can withdraw their permission at any time during this project without any penalty. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

The names of the research participants and identity of the school will be kept confidential at all times and in all academic writing about the study. Your individual privacy will be maintained in all published and written data resulting from the study. All research data will be destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours sincerely

Catriona Louise Montagu

Walsh.catriona@googlemail.com

0722844214

7.8. APPENDIX H
INFORMATION SHEET PARENTS

21 August 2013

Dear Grade 3 Parent / Guardian

As many of you know, I (Catriona Montagu) am a student in the process of completing my Masters Degree in the School of Education at the University of the Witwatersrand. As part of my degree I am doing research on various methods of teaching used in Grade Three, my research is entitled *Traditional Teaching and Computer Based Teaching of Grammar in Grade Three.* My research aims to see if one of the above methods is more effective in the Grade Three classroom, and to ascertain learner's preferences towards the two teaching methods.

My research involves me teaching lessons to my current class of Grade Three learners, using the two teaching methods stated above (traditional teaching and computer based teaching). I intend to teach Grammar lessons that are aligned with our curriculum so as to create as little disruption as possible, and to continue with our planned lessons and assessments. Once the lessons have been taught (four grammar lessons), the learners will complete two assessment tasks and an evaluation. Observation notes will be taken during and immediately after the lesson.

Two of the lessons will be taught in the classroom, and the other two lessons will be in the computer room.

The reason why I have chosen this class is because as a teacher at the school and of your child's class, I would like to ascertain whether one of the methods is more effective, and if so report to my colleagues and HOD.

I would really appreciate your permission to conduct this research with my current class of Grade Three learners.

The intention of this letter is to seek your permission in this regard.

Please note that participation in this study is completely voluntary. Your child will not be advantaged or disadvantaged in any way. S/he will be reassured that s/he can withdraw her/his participation at any time during this project without any penalty. There are no foreseeable risks in participating and your child will not be paid for this study.

Your child's name and identity will be kept confidential at all times and in all academic writing about the study. His/her individual privacy will be maintained in all published and written data resulting from the study.

All research data will be destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information.

Thank you very much for your help.

Yours sincerely,

Catriona Montagu

Walsh.catriona@googlemail.com

Protocol Number: 2013ECE135M

7.9. APPENDIX I
INFORMATION SHEET LEARNERS

21 August 2013

Dear Grade 3 Learner

My name is Catriona Montagu. I am a student at the University of the Witwatersrand doing a Masters Degree in Education.

As part of my degree, I am doing research on *Traditional Teaching and Computer Based Teaching of Grammar in Grade Three.*

My research involves me teaching you four lessons on Grammar, and watching you as I teach too. For some of the lessons, I will be teaching you in our classroom using the board, carpet and other tools from our classroom, and for the other lessons, I will be teaching you in the computer room.

I was wondering if you would like to take part in this research by allowing me to teach and watch you for these Grammar lessons.

Remember, this is not a test, it is not for marks and it is voluntary, which means that you don't have to do it. Also, if you decide halfway through that you prefer to stop, this is completely your choice and will not affect you negatively in any way.

I will not be using your own name but I will make one up so no one can identify you. All information about you will be kept confidential in all my writing about the study. Also, all collected information will be stored safely and destroyed between 3-5 years after I have completed my project.

Your parents have also been given an information sheet and consent form, but at the end of the day it is your decision to join me in the study.

I look forward to working with you!

Please feel free to contact me if you have any questions.

Thank you

Catriona Montagu

Walsh.catriona@googlemail.com

Protocol Number: 2013ECE135M

7.10. APPENDIX J

LEARNER CONSENT FORM

Please fill in the reply slip below if you agree to participate in my study called:

Traditional Teaching and Computer Based Teaching of Grammar in Grade Three.

My name is: _____

Permission for documents (assessment tasks, learner evaluation, class exercises)

I agree that (assessment tasks, learner evaluation and class exercises) can be used for this study only. YES/NO

Permission for lessons to be taught

I agree to allow Catriona Montagu to teach me four Grammar lessons. YES/NO

Permission for observations

I agree to be observed in class. YES/NO

Permission for questionnaire/test

I agree to fill in a question and answer sheet or write a test for this study. YES/NO

I know that Catriona Montagu will keep my information confidential and destroy any notes made within 3-5 years after completion of project. YES/NO

I know that it is my choice whether or not to take part YES/NO

I know that my real name will not be used. YES/NO

I know that I can ask you to leave me out of the study at any time. YES/NO

Sign_____ Date_____

Catriona Montagu Walsh.catriona@googlemail.com Protocol No: 2013ECE135M

7.11. APPENDIX K

PARENT'S CONSENT FORM

Please fill in and return the reply slip below indicating your willingness to allow your child to participate in my voluntary research project called: *Traditional Teaching and Computer Based Teaching of Grammar in Grade Three.*

I, _____ the parent of _____

Permission for documents (assessment tasks, learner evaluation, class exercises)

I agree that my child's (assessment tasks, learner evaluation and class exercises) can be used for this study only. YES/NO

Permission for lessons to be taught

I agree to allow Catriona Montagu to teach my child four Grammar lessons. YES/NO

Permission for observations

I agree that my child may be observed in class. YES/NO

Permission for questionnaire/test

I agree that my child may fill in a question and answer sheet or write a test for this study. YES/NO

I know that Catriona Montagu will keep my child's information confidential and destroy any notes made within 3-5 years after completion of project. YES/NO

I know that it is my choice whether or not my child takes part. YES/NO

I know that my child's name will not be used. YES/NO

I know that my child can ask you to be left out of the study at any time. YES/NO

Parent Signature: _____ Date: _____

Catriona Montagu Walsh.catriona@googlemail.com

Protocol Number: 2013ECE135M

7.12. APPENDIX L
INFORMATION SHEET TEACHERS

August 2013

Dear Grade Three Colleagues

As you know, I (Catriona Louise Montagu) am a student in the process of completing my Masters Degree in the School of Education at the University of the Witwatersrand. As part of my degree I am doing research on various methods of teaching used in Grade Three, my research is entitled *Traditional Teaching and Computer Based Teaching of Grammar in Grade Three.* My research aims to see if one of the above methods is more effective in the Grade Three classroom, and to ascertain learner's preferences towards the two teaching methods.

My research involves me teaching lessons to my current class of Grade Three learners, using the two teaching methods stated above (traditional teaching and computer based teaching). I intend to teach Grammar lessons that are aligned with our curriculum so as to create as little disruption as possible, and to continue with our planned lessons and assessments. Once the lessons have been taught (four grammar lessons), the learners will complete two assessment tasks and an evaluation. Observation notes will be taken during and immediately after the lesson.

Two of the lessons will be taught in the classroom, and the other two lessons will be in the computer room.

Further to teaching and observing my own class, I would like to hear your views regarding the two methods of teaching, and hear your learner's responses towards the two methods.

I was wondering whether you would mind part-taking in a semi-structured interview? This would take about 1 hour, and would be conducted at a time that is convenient to you. This type of interview allows for additional questions to be posed based on the teacher's responses rather than needing to strictly adhere to a set of pre-planned questions, so allowing for more detail and depth in responses.

Please note that participation in this study is completely voluntary. You will not be advantaged or disadvantaged in any way should you choose to participate or not. You can withdraw permission at any time during this project without any penalty should you feel any discomfort. There are no foreseeable risks in participating in this study, and you will not be paid for this study.

Your name and identity will be kept confidential at all times and in all academic writing about the study. Your individual privacy will be maintained in all published and written data resulting from the study.

All research data will be destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information.

Thank you very much for your help.

Yours sincerely,

Catriona Louise Montagu

Walsh.catriona@googlemail.com

Protocol Number: 2013ECE135M

7.13. APPENDIX M

TEACHER'S CONSENT FORM

Please fill in and return the reply slip below indicating your willingness to be a participant in my voluntary research project called: *Traditional Teaching and Computer Based Teaching of Grammar in Grade Three.*

I, _____ give my consent for the following:

Permission for interview

I would like to be interviewed for this study. YES/NO

I know that I can stop the interview at any time and don't have to answer all the questions asked. YES/NO

I know that Catriona Louise Montagu will keep my information confidential and destroy any notes made within 3-5 years after completion of project. YES/NO

I know that it is my choice whether or not to take part YES/NO

I know that I can ask you to leave me out of the study at any time. YES/NO

Sign_____ Date_____

Catriona Louise Montagu

Walsh.catriona@googlemail.com

Protocol Number: 2013ECE135M