EVALUATING THE EFFECT OF ACADEMIC LITERACY

INTERVENTION   PROGRAMME ON THE SATAP ENGLISH SCORES

OF FIRST YEAR STUDENTSAT A UNIVERSITY IN THE

EASTERN CAPE PROVINCE, SOUTH AFRICA.

by

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DECLARATION

I, Yolisa Yolande Ludidi, hereby declare that the dissertation entitled EVALUATING THE EFFECT OF THE ACADEMIC LITERACY INTERVENTION PROGRAMME ON SATAP ENGLISH SCORES AT A PUBLIC UNIVERSITY IN THE EASTERN CAPE is my own work and that it has not been submitted before for any other degree or assessment at any other university.
I also declare that the sources I have used have been indicated, and I have adhered to the correct referencing techniques and guidelines of the University of South Africa.

_____
Signature

Signed on the _____day of_____2014
Butterworth, South Africa

DEDICATION

This dissertation is dedicated, to the loving memory of my late parents, Soga and Saise Ludidi, my daughter Onele, my son and daughter- in- law NqabomzikaSoga and Dr. Nolwazi (nee') Kwinana, my siblings Nomsa, Cikizwa and her husband Billy Tom, whose encouragement, support and guidance have enabled me to fulfill my potential.

- *Father- E.W.Soga Ludidi*
  1915-1978

- *Mother- M.N Saise.Ludidi (nee' Ntshona)*
  1925-2007

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EVALUATING THE EFFECT OF ACADEMIC LITERACY INTERVENTION PROGRAMME ON THE SATAP ENGLISH TEST SCORES OF FIRST YEAR STUDENTS AT A UNIVERSITY IN THE EASTERN CAPE PROVINCE, SOUTH AFRICA

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ABSTRACT

The effect of the academic literacy intervention programme on the SATAP English scores was evaluated. This study begins as a longitudinal study in the Faculty of Science, Engineering and Technology (FSET). 120 subjects from the Electrical, Civil, Building and Mechanical departments in the FSET were randomly selected to serve as an experimental group. The research design employed a quantitative methodology. Data was collected using the Standardised Assessment Tests for Access and Placement (SATAP) English Test. The test was administered to the experimental group as a pre-test and post-test measure at the beginning of the year and at the end of the year. The SPSS statistical programme with frequency tables and graphs was utilised to analyse the data obtained. The results indicated that the difference between the pre-test scores and the post-test scores was statistically significant. The post-test scores were significantly higher than the pre-test ones. It was concluded that the academic literacy intervention programme was effective in increasing the SATAP scores and therefore addressed some of the language needs of students.

Key terms: academic support; academic literacy; students' language needs; first year university students; pretest and posttest; academic development; SATAP; extended studies; drop-out; academic failure.

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INTRODUCTION

1.1 INTRODUCTION AND OVERVIEW

In South Africa today, the need to address the high drop-out rate tops many departmental and faculty agendas and increasingly solutions are being sought to reverse the negative trend De Klerk, Schoeman, Van Deventer and Schalwyk (2006:1). Student attrition (wastage, drop-out, academic failure) is a phenomenon that has plagued education for many years and this is detrimental to the student, the institution as well as the country Tinto (1993:19). Decreasing throughputs and low retention rates have been a serious challenge in South African higher education institutions. Thousands of young people are dropping out of their university studies, giving up on their career dreams. Three Eastern Cape Universities, namely, Fort Hare University, Walter Sisulu University (WSU) and Rhodes University mention similar reasons for this gradually increasing problem. These reasons are: financial difficulties, bad choice of courses and students difficulty in coping with academic studies *(Walter Sisulu University Student News Agency (WSUSNA).*2011.24 Nov:3).

The *WSUSNA* further claims that the Law School at the University of Fort Hare has had the highest drop-out rate recently as a result of the "declining level of academic literacy being delivered from school", whilst the WSU's Acting Director for Marketing, Communication and Development mentions the differences in the method of teaching at university and at high school, where learners are often spoon-fed information. At university, students have to learn to work independently and to do research. They have to be responsible for their projects, manage their time and motivate themselves much more than in a school (*WSUSNA.*2011.24 November: 3).

The Council of Higher Education (CHE), which is a statutory body that advises the Minister of Higher Education, in its 2013 report, highlights the need for a radical reform in the higher education sector. The report further claims that poor academic preparation at school is the dominant learning-related reason for poor university performance, but there is no prospect that the schooling sector will

be able to produce the numbers of adequately prepared matriculants that higher education requires in the foreseeable future. One of the proposed changes in the document is extending undergraduate studies by a year (Council of Higher Education.2012-2013.*Annual Report).*

In 2005, the Department of Education reported that, of the 120 000 students who enrolled in higher education in 2000, 36 000 (30%) dropped-out during their first year of study. A further 24 000 dropped-out during their second and third years. Subsequently, the Department issued a public statement lamenting the cost of the drop- out rate to the National Treasury of R4, 5 billion in grants and subsidies to Higher Education Institution without a commensurate return in investment.

Today, one of the major challenges facing most higher education institutions is to provide support through extended studies and foundation type programmes as part of the formal offerings. De Klerk et al (2006:1) further bemoan the fact that, while academic development programmes have in varying forms, been offered in some faculties at WSU, only pockets of in-depth research appear to have been conducted on the efficacy and appropriateness of such programmes. There has been much debate as to why students are not achieving success. Many have suggested that the answer lies in the lack of preparedness among first-year cohorts. Impact

Shay (1994:2) states that concerns about the nature of the school-leaver applying to universities in South Africa have been voiced for more than a decade now, with an " increasing number of students in the educational system, who for reasons of language ,socio-economic status or cultural background, experience serious and persistent problems in interpreting academic tasks. With the increasing intake of students from disadvantaged backgrounds, the pressure on universities to deal with such challenges is growing. As a result, universities in South Africa have attempted to use a variety of alternative access programmes for many years. This has led to different curricular routes being established. One of the options is the extended studies programme, which extends a three year study by an additional year.

Researchers such as Beukes (1991) Buthelezi (1995) Coetzee (2001) De Kadt (2001) and Webb (2002) all maintain that an insufficient command of English is identified as a key cause of the high drop-out rate in universities. Weideman (2011: iv) in the preamble to his book also states that few would argue against the claim that a large number of students at tertiary institutions across the world have inadequate skills in English, which impedes their development and success. Bock

(1998: 25) also attested to this, saying, "in order for students to grasp academic texts, they need to have knowledge of the context and be competent in the language".

More recently, Schalkwyk (2008:2) in her study titled "Acquiring academic literacy: A case of first year extended degree programme students at Stellenbosch University" opined that the higher education system in South Africa, as elsewhere in the world, is challenged to respond comprehensively to the gap between learners' school attainment and the intellectual demands of higher education programmes. With the publication of the NPHE three years later, this vision was given shape in the form of a number of strategic objectives that included improving throughput and graduation rates, providing for the funding of academic development programmes and ensuring that equity of access leads to equity of outcomes (Department of Education,2001:10). Fraser and Killen (2005:85) state that dropout rates continue to rise across a broad spectrum of school achievement, and lecturers increasingly cite students' inability to read and write in a critical and analytical manner, to discern between fact and opinion, to recognise what is deemed evidence for an argument and to grasp the discourse of the discipline, in essence academic illiteracy as central to the problem.

Academic development programmes aimed at fulfilling throughputs and equity objectives were introduced at WSU in 2005. In addressing the issue of decreasing throughput rates, the Centre for Learning and Teaching Development (CLTD) developed policies, strategies and action plans for learning and teaching development. This strategy incorporated the Student Academic Development programmes. Their mandate was to provide academic support to underprepared students. The programme was piloted in the Faculty of Science, Engineering and Technology (FSET). However, now an array of academic support programmes is offered to first-year and under-prepared students, who are placed in the extended studies programme after tests to assess their academic preparedness have been administered to them. One of those programmes is Academic Literacy, which deals with the language proficiency needs of first year students. Language proficiency has been identified as vital predictors of learners' success throughout their academic life and even in the working environment. The traditional response to the issue of academic literacy in the tertiary sector has been to develop access or first semester or year modules aimed at developing students' academic literacy, mainly focused on academic writing. The Academic Literacy intervention programme aims at assisting them in accessing, processing and interpreting information accurately from a variety of sources by relevant means and enabling

them to apply knowledge within acceptable academic conventions. This programme has now been offered to underprepared students but its effect has not been evaluated. This study therefore seeks to evaluate the Academic Literacy intervention programme and the effect it has on the Standardised Assessment Tests for Access and Placement (SATAP) scores, after it has been offered for a year to first-year students who have been provisionally admitted to the Faculty of Science and Engineering and Technology (FSET) at WSU.

1.2 Contextual background of the research problem

"The cost of education in institutions of Higher Education is very high, and is exacerbated by the high failure rate among first year students in particular" Tinto (1993:56). Ramapele (2012:27) states that institutions of higher learning seem to face various challenges of dealing with under preparedness of students who register for the first time for post-school level of study. According to Hrabowsk and Pearson (1993: 234) poor academic performance has shown to impact negatively on students' persistence level of study. "Many institutions have come to understand the need to both challenge and support the students they admit, and make a commitment to help them succeed" Winston and Sandor (1994:78). Most universities have extended some of their programmes by a year on which they provide substantial additional support, through extra developmental courses and content in the programme. The support is provided very intensively in the first year, although there is little continued support in subsequent years. The CLTD at WSU administers placement tests to students that are admitted in the (FSET).

The results of the English Placement tests written by the first year students in these Departments, show that the students have low academic literacy levels, and most do not have the necessary language skills to handle university work without additional support. Therefore, most of the students are at-risk of academic failure. In the Academic Literacy intervention programme, students are exposed to sophisticated forms of accessing and presenting knowledge, using academic conventions acceptable in different disciplines. They are involved in different intervention activities that are aimed at developing different forms of academic literacy and communication skills, ranging from the receptive skills of listening and reading, to the productive skills (writing and speaking) in English. Murray (2010: 56) states that there is an increasingly widespread perception within higher education that the language and literacy skills of students of both English speaking backgrounds and non-English speaking backgrounds, is in a state of decline. This situation, some would argue, has forced lecturers to 'tone down' their course

materials and spend time addressing English language problems many may regard as outside the scope of their expertise and locus of responsibility. These intervention programmes have been used for some time now, but their effect has rarely been evaluated. This study, therefore, seeks to determine if the academic literacy intervention programme makes a difference to the SATAP scores of the first year students. The SATAP test is a tool that is used at WSU to test the academic preparedness of students admitted to the (FSET).

This study focused on only four Engineering departments namely Civil, Building, and Electrical and Mechanical because they are the only departments in Faculty of Science, Engineering and Technology that administer the SATAP tests to first year students. Students in the above mentioned departments are admitted based on their grade 12 results used in conjunction with the SATAP results. These combined results, determine whether a student is placed in the mainstream or in the extended programme (EP). Those students placed in the extended programme are offered five academic support or intervention programmes, namely, Life Skills (LS), Academic Literacy (AL), Writing and Reading Course (WRC), and Peer Assisted Learning (PAL). During the course of their first academic year, their general academic performance is tracked and monitored by tracking specialists, who flag them and refer them to academic advisors, student counsellors and health practitioners, who subsequently offer advice when needed. The overarching aim of all these courses is to ensure an effective and efficient system-wide approach to student access and retention, by assisting faculties and cooperating with related institutional units to promote student access, leading to student success.

The Department of Higher Education and Training (DHET) allocates a specific amount for each approved extended programme, and currently at WSU there are 10 approved Departments in the Extended Programme (EP). Since the Department invests money in the EP, there has to be evidence to show that the intervention programmes, which some institutions call "enrichment programmes' do add value to the students' academic preparation and that they contribute to the improvement of efficiency in the extended curriculum and subsequently leads to improved retention and throughputs. The alarming failure rate and the poor throughput rates in Higher Education Institutions are identified as major education problems in the National Plan for Higher Education (2002). Higher Education Institutions took an initiative to develop courses that would provide the necessary support for these particular students.

One of the intervention programmes offered to the first time students placed in the Extended Programme at Walter Sisulu University is Academic Literacy, which is the main focus of thisstudy. The notion of Academic Literacy has been around for some time, but its definition is problematic. Weingarten (1993:3) said that, if the pedagogical activities of undergraduates are to be effective, students must have the knowledge and abilities that enable them to march towards the educated state that merits a culminating degree". Leibowitz (2001:2) writing some years later expands on this definition by stating that academic literacy "can be summarised as a culturally specific set of linguistic and discourse conventions, influenced by written forms utilised primarily in academic institutions". Lea and Street (1998: 160) provide a most useful description: "Academic Literacy practises – reading and writing within disciplines, constitute central processes through which students learn new subjects and develop their knowledge about new areas of study".

In the context of WSU and this study, Academic Literacy is a module which falls within the ambit of academic development as it is taught by academic development practitioners and not by faculty staff. This module aims at addressing the English language skills' gaps identified in the SATAP test at the beginning of every year. Walter Sisulu University, like all other South African universities, as a result of as a result of the increasing intake of students from disadvantaged backgrounds, is experiencing enormous pressure in dealing with underprepared students. Therefore, these intervention programmes, of which Academic Literacy is a subset, are expected to have a broader mission of engaging faculties and administration. Todd (2002:67) also asserts that a weak and marginalised intervention programme can have a detrimental effect on that particular cohort of students, in that, it would enable the institution to continue a dysfunctional teaching and curriculum structure that creates barriers for many students and prevents their ultimate success. This is one reason why it is crucial to evaluate a programme to ensure that it adds value to students' learning.

1.3   Relevance and importance of the study

This research study is timely because its findings will help determine whether the academic literacy intervention programme offered at WSU has an effect on the SATAP scores of first time students who are placed in the Extended Programme. The research findings will further assist academic support and intervention programme practitioners, Faculties with Departments that have extended their programmes and curriculum designers and developers who design the programmes, by emphasising the skills gaps identified by the tests.

According to Bureau and Romney (1994:130) research indicates that programmes designed to target first year students increase their likelihood of success during that year and their chances of completing their undergraduate studies are high. Another benefit of this study is that it will assist the institution in curbing the high failure rate among first year students in particular. The high failure rate costs the Department of Higher Education enormously. The English language skills gaps identified by SATAP practitioners may also be very useful to Faculty language lecturers, enabling them focus on deficiencies identified by the tests in their daily language teaching.

These research findings will particularly assist the Extended Studies Academy (ESA) within the Centre for Learning and Teaching Development (CLTD) at WSU where all these skills-based retention programmes are housed, to improve the design and implementation strategies, resulting in significant enhancement of future programme performance, increased retention, and improved throughputs. If this programme is found to be effective, it could be recommended for use across the entire institution to help all students engaging in academic discourse through the medium of English as a language of learning.

1.4 PROBLEM STATEMENT AND RESEARCH QUESTIONS

There have been a number of interventions in South African universities for the improvement of students pass rates, retention and throughputs including Foundation Provisioning, Curriculum Development, Life Skills programmes, Supplemental Instruction or Peer Assisted Learning and Mentoring Programmes. Since these intervention programmes have now been implemented, there is a need for them to be evaluated for their effectiveness and if there has been any contribution to increased and improved pass rates.

The focus of this evaluation will be on the following main research question:

- Does the academic literacy intervention programme improve the SATAP scores of the SATAP English test of first year students in the FSET?

This sub-question follows;

- Have there been improvements in the SATAP test scores of students who have been offered the   Academic Literacy intervention programme?
- Have the skills gaps identified in the pre-test been resolved in the post-test?

1.5 AIM AND OBJECTIVES OF THE RESEARCH STUDY

1.5.1 Aim of this evaluation:

To evaluate the effect of the Academic Literacy intervention programme on the SATAP scores of first year students, by comparing the pre-test and post-test scores of participating first year students and to make recommendations to providers and practitioners of intervention programmes and also to extended studies curriculum designers and developers.

1.3.2 Objectives

- To determine whether Academic Literacy as an intervention programme has had a positive effect on the language development of students.
- To make recommendations to providers and practitioners of intervention programmes and also extended studies curriculum designers and developers.

1.6 KEY THEORETICAL CONCEPTS OF THE STUDY

For the purpose of this study, the terms identified below are defined as follows:

Academic Literacy

For the purpose of this research study, academic literacy (WSU context) is an academic development specific course that will enable one to process and interpret information accurately from a variety of sources and by relevant means and to acquire knowledge using acceptable academic conventions. Academic Literacy is the key to academic success and it enables students to properly manage all the information that they are exposed to, particularly that which will be prescribed in their specific fields of study and course instructors or lecturers (WSU-CLTD Academic Literacy Course Programme: 2005).

Academic support

It encompasses a broad array of educational strategies including tutoring sessions, supplemental courses and summer learning experiences. It may also refer to a wide variety of instructional methods, education services and school resources that are provided to students in an effort to help them accelerate their learning progress, catch up with their peers, meet learning standards or generally succeed at school.

English Language proficiency needs

 Proficiency refers to the ability of students to use the English language to make and communicate meaning in spoken and written contexts while completing their university studies DEEWR (2009: 2). The view of English language proficiency as the ability to organise language to carry out a variety of communication tasks, distinguishes the use of language as a formal system concerned only with correct use of grammar and sentence structure.

First year university students

It refers to students who have finished high school and are entering their first year of university studies. It may be also be defined as students who have completed less than the equivalent of 1 full year of undergraduate work (*Free Dictionary by Farlex).*

Pre-test and post-test

Pre-test is a preliminary test to evaluate the preparedness of a student for further studies. It is often administered to determine a students' baseline knowledge or preparedness for an educational experience or course of study and also whether the students are sufficiently prepared to begin a new course of study. A post-test is a test given to students after completion of an instructional programme or segment and is often used in conjunction with a pre-test to measure their achievement and the effectiveness of the programme.

Academic Development

Academic Development, which Academic Literacy as an academic support programme is a sub-set of, refers to all initiatives taken, both at the central and local level, in order to support faculty members to fulfil their different roles e.g.in teaching and in research throughout their academic careers. Volbrecht and Boughey (2004) define academic development as an open set of practices concerned with improving the quality of teaching and learning in higher education.

Intervention programme

It is a programme designed to serve students who are at risk of not reaching their academic goals or maintaining their academic grades. When school-wide screening or progress monitoring results indicates a deficit in a specific area, an intervention programme is implemented and progress within that intervention is monitored. It provides content for instruction intended for use in differentiated and intensive instruction to meet student learning needs in one or more of the specific areas of reading. It is implemented as extra assistance with the goal of changing or preventing a problem.

Extended studies programme

It is a programme that strives to assist students who show potential to succeed. The students are selected and are exposed to a carefully designed supportive learning environment, which enhances their ability to succeed. These students' academic study will be extended by a year of additional study in order to allow for the inclusion of activities intended to support and develop them.

Drop-out rate

It is the proportion of pupils from a cohort enrolled in a given grade in a given university year, who are longer enrolled in the following school year.

Academic failure

It is an unsuccessful attempt at academic achievement, generally stemming from the poor capacity of an individual. It occurs when the primary aims of education cannot be delivered to the degree that there is a fundamental and ongoing breakdown in a students' ability to learn. Academic failure is the result of failing to turn in satisfactory work when it is due, over a period of time.

1.7 RESEARCH DESIGNS AND METHODS

1.7.1 Research design

This study, as an evaluation of the effect of the academic literacy intervention programme in determining the language development of first year students, has followed the quantitative research approach and a pre-experimental single-group pre-test post-test design. The quantitative research method was used in this study because "it emphasised objectivity and quantification of phenomena" McMillan and Schumacher (2006:23).

The pre-experimental single group pre-test post-test design was chosen because the same group of students, who wrote the SATAP test (pre-test) at beginning of the year, wrote the post-test at the end of the same year, after the ALIP treatment.

1.7.2 Sampling procedure

The convenient sampling method, which McMillan and Schumacher (2006: 125) also calls available sampling was used in this study. The researcher made use of this type of sampling because the subjects were available and selected by their various departments to write the SATAP tests to determine the academic skills and assist in identifying students who might need academic support in order to cope with their studies. The target population consisted of first year students who had been admitted in the four departments, namely, Civil, Electrical, Building and Mechanical Engineering in the Faculty of Science, Engineering and Technology (FSET). The sample consisted of 120 first year students who had been selected by the Faculty, between the ages of 18 to 25 years, both male and female and from the same cultural background. Test scores, before and after exposure to ALIP, were analysed for this study.

1.7.3 Data Collection

Data was collected through pretest and posttest scores of the participants. The single group pre-test post-test design was used. The researcher used the paper and pencil test, a standardised test which McMillan and Schumacher (2006:189) claims "provide uniform procedures for administering and scoring them". The pre-test was written at the beginning of the year before the treatment. The SATAP English test was the tool used. The treatment which was Academic literacy was offered throughout the year as an intervention programme. The same group of students who wrote the test was again post- tested after the exposure to ALIP. The pre-test and post-test scores were collected, calculated, compared and finally analysed.

1.7.4 Data analysis

The quantitative data was analysed in a reliable and valid manner by the Statistical Package Social Science (SPSS) a computer programme that is used for the statistical analysis of data that allows in-depth preparation and analysis of available data. All the scores were presented in tables and graphs (histograms and line charts), in order to provide a comparative representation of various results achieved. The test scores for the pre-tests and posttests were compared according to the average percentage marks achieved. The data analysed is presented in tables and figures in chapter 4 of this study.

1.7.5 Ethical considerations

To ensure trustworthiness and their anonymity the researcher consent forms were signed by the participants. Ethical guidelines were followed as knowledge about research was ensured. The WSU research ethics form was filled and sent to the research ethics committee. A preliminary literature review was conducted in order to explore and clarify the researcher's own views and assumptions that may have influenced this study.

1.7.6 Limitations of the study

The limitation of the study was that there was no control group. The researcher cannot be sure that other events occurring between the pre-test and the post-test did not cause change in the test scores.

1.8 DEMARCATION OF THE STUDY INTO CHAPTERS

Chapter 1: Introduction and background

This chapter outlines the background to the research. Reasons for selecting the problem are been identified, aims and objectives of the study carefully explained. It also highlights the course of the research and the justification for choosing the quantitative research method as well as an overview of the research design and methodology is provided. This chapter serves as an overview of the path that the research study followed.

Chapter 2: Literature review

This chapter represents the review of literature related to the study. The theoretical argument for the field of study is supported from various sources.

Chapter 3: Research design and methodology

This chapter describes the approach and research methods used by the researcher. The research design selected is the quantitative design. Methods are outlined and limitations and approach are explored. Ethical issues, sampling and data collection techniques are discussed in this chapter. The data analysis that leads to the findings of the research is also dealt with in this chapter.

Chapter 4: Data presentation, analysis and discussion of results

In this chapter data were presented, analysed and discussed in light of the relevant literature to put the argument and the findings into perspective. In a research study the analysis and discussion of the results ultimately produce the research findings. It is this chapter that indicates to the researcher whether the choice of methods addresses such key aspects as validity and reliability.

Chapter 5: Summary, conclusions and recommendations

The summary consists of a discussion of the findings of the literature reviewed and of the empirical study based on the research questions. It also interprets the main research findings. Recommendations for both practice and research were made and limitations of the study spelt out.

1.9 CONCLUSION

Chapter one served to orientate the reader to this research study. It began with a description of the contextual background and relevance of the study, leading to the research problem statement which referred to the researcher's involvement in SATAP testing, noticing students' lack of language proficiency, which may impede their academic performance. An introduction and an explanation of the research methodology were followed by a description of the trustworthiness of the research. Finally, a discussion of ethical practices, followed by a chapter outlay concluded the chapter.

CHAPTER 2

 LITERATURE REVIEW

2.1 INTRODUCTION

According to Hart (1998) a review of literature is important because, without it, one will not be able to acquire an understanding of one's topic, and what has already been done on it, how it has been researched and what the key issues are.

This is a quantitative study which endeavours to build a logical theoretical framework within which to locate the inquiry and to discuss the underlying assumptions behind the research question, as proposed by Marshall and Rossman (1999). In this chapter the researcher presents literature related to the study within some specified titles. The literature was reviewed in order to explicitly expose the arguments and perceptions of the researchers, concerning the research question, which is about the effect of the academic literacy intervention programme on SATAP English scores of first-year students in the Faculty of Science, Engineering and Technology.

This Literature review tends to contextualize this research work in relation to previous research on the subject. In this literature review a thorough review of domestic and international publications and relevant documents on first year support, students' English proficiency skills and retention strategies is conducted, and the theoretical background for the investigation is provided. Sub-headings are used to enhance order and wider coverage of ideas. The researcher further discusses the relevant literature in detail as approximately as possible. Henning (2004) states that a good literature review lays the foundation for research and may be used to argue one's discussions.

Chapter 1 has introduced the project and provided framework for academic literacy as an intervention programme at the Walter Sisulu University (WSU). Decreasing throughput and low retention rates has necessitated that the current academic programmes be evaluated to find if they have an effect on the SATAP scores which may lead to better academic performance. Sepota (2012:1) claims that academic support is becoming an imperative trajectory in both academic and political circles in South Africa. She further states that it is no longer deemed peripheral but a lynchpin for achieving satisfactorily through in higher education. This chapter reviews international and South African research in academic support programmes at higher education institutions.

2.2 THEORETICAL FRAMEWORK

Collins (1991) defined a framework as a basic conceptual structure of rules, beliefs, or ideas which one could use to decide what to do. Similarly, Collins (1991) emphasized theory as this set of rules, beliefs or ideas that describes and serves as the basis of any action. Various theories and approaches were selected and incorporated within the post-modernistic paradigm and enhanced it by crafting them within the emancipatory paradigm. The selected applicable approaches and theories lay intertwined within this research's theoretical framework that served as a guide for the research study. Constructed upon the emancipatory paradigm, the theoretical framework developed for this study was contextualized to the South African environment and the WSU context. It included various approaches namely critical, social constructivism and deficit-based approach.

2.2.1 Emancipatory paradigm

Hutton and Thompson (2000) describe the emancipatory paradigm as viewing the world with its "…growing inequalities of income and wealth, massive inequalities in relation to cultural recognition and social diversity, and huge inequalities arising out of access to information. They further state that there is a widening divide between those who are highly educated, skilled and well- paid specialists and those who are less skilled but currently employed, and the third of the population, who are poorly educated, poorly qualified, casualised, unwaged and unemployed. The emancipatory paradigm closely linked to the principles of critical theory. Neuman (in Bhana and Kanjee)(2001:144) defined critical theory as; "A critical process of inquiry that goes beyond surface illusions to uncover the real structures in the material world in order to help people change conditions and build a better world for themselves". This definition suggests that critical theory encourages people to look beyond any possible masks hiding either developed information (e.g. models and theories) or social practices (e.g. apartheid, traditional higher education practices) which negatively affect their lives, in order to enhance and develop better circumstances for all.

The Centre for Learning and Teaching Development (CLTD) at Walter Sisulu University (WSU) therefore took on a critical and emancipatory stance, especially when viewing the immense changes within historical development of education over the past decades, as well as their ever-changing feature as Eloff and Ebersohn (2004)puts it. This study also critically took into account the applicability of academic and learning support approaches and practices applied by higher education institutions.

2.2.2 Social constructivism

Social constructivism explained the learning process of constructing new knowledge which varied across different social context and historical times. "It is built up and passed on through constant process of social interaction" (Donald 2002:72). This was a key point that needed to be taken into account when developing the Academic Literacy intervention programme because it was not merely a process of handing over academic literacy knowledge, but taking into account the social tools such as language, interaction and history, that played a role in the students' "cultural capital" as suggested by Bourdieu (1986). Beekman (2007) proposed a paradigm shift from a deficit-based to asset-based approach for student counselling and academic support services at Universities, because all students have strengths, skills and talents. Elloff and Ebersohn (2004) stated that a needs-based approach was efficient in addressing the challenges facing modern-day societies and was particularly inadequate in the South Africa context. An asset-based approach focused on identifying the assets (positives and other relevant resources) which surround the students, instead of focusing on the prevailing deficits, and it is applied towards the students' benefit (Landsberg, 2005:51). An asset-based approach is more applicable and beneficial in the process of an Academic Literacy intervention programme in an attempt to address the students' learning support needs, more than a deficit approach. The deficit-based practices compelled universities to set their existing values and expectations as the standard and rate many students as not good enough, the cultural capital theory suggested an understanding of cultural diversity without an implicit value judgment.

Bourdieu's cultural capital theory Langdon (2004) applied to students from disadvantaged backgrounds, shows that many of these students appear to be unable to position themselves to take advantage of opportunities available to them at institutions. They do not always have the cultural capital to succeed in higher education because they were not exposed to effective schooling, learning and studying. According to this theory the institution needs to facilitate the development of appropriate types and levels of cultural capital within the students to improve their chances at success. This was where the CLTD played a role in infusing the academic literacy intervention course into the extended programme curriculum.

2.2.3 Deficit-based approach

An approach that tends to focus on needs and problems in people or helping people avoid risks associated with negative outcomes. These risk-based interventions do not sustain change Skodol (2010). WSU uses the deficit- based approach although Bogeschneider and Olisin (1998) posit that it is ineffective and sometimes worsens behaviour, as against strengths-based (asset) approach which they

claim is sustainable. A major problem in the deficit-based approach is that it often comes too late, intervening after the problem is already there, rather than working to prevent it in the first place.

2.3 DROP - OUT RATES: A CAUSE FOR CONCERN

Johnson (2002) states that drop-out rates amongst universities are reported to be much higher with almost one in four students failing to complete their course. Leith (2008) commented that despite millions of rands being paid to universities, to help retain students, drop-out rate has remained constant in the past five years globally. It is important that universities understand the factors that contribute to student drop-out and equally those that support students Tinto (2003). Tinto further proposed that the academic and social engagement of students with their peers and the wider learning community is paramount in positive student outcomes. Berger and Tierney 2000) have developed a different theoretical direction that champions the adaptation of institutions to accommodate the individual nature of students.

Regardless of the theoretical approach it is apparent that considerable student withdrawal is fostered by their perception of how well the institution values them and how well it responds to their needs. Wilson (2002) claims that some universities have invested in specific projects to deal with their own particular areas of concern, some have adopted proactive approaches to retention, including student mentoring by more experienced peers, academic mentors, departmental action plans, quality teaching, training for academic staff, dedicated retention officers, some even go further to train final year and post-graduate students to offer support to first-year students, up to identifying those that may be "high-risk". Changes to the curriculum including the introduction of modular schemes, flexible learning locations, e-learning, student-centred learning, low stakes and formative assessment, collaborative learning and manageable workload are all encouraged to enhance student achievement.

Despite the changing approach of many Higher Education (HE) providers, student retention and progression continues to be a cause for concern. a recent report by the select Committee on Public Accounts in the United Kingdom, the authors report that: there is much that universities can do to improve retention, good quality management information including on the reasons for leaving is needed. The report further recommends that additional academic support for students, for example, for those struggling with the mathematical elements of their course should be provided. Student access to tutors who can provide pastoral and academic support is important, especially as the numbers of student entering universities increases.

Webb (1999) states that research on literacy levels in the South African schooling system indicates a deepening crisis and further reported that many of the first-year students at the University of Pretoria had reading levels of Grade 7-8 students. Morrow (2005) had this to say, in relation to literacy levels evident in South African schooling: "If the quality of schooling is understood in terms of enabling access to the modern world, and if such access depends on literacy and numeracy, then improving the quality of schooling for the majority, and particularly the disadvantaged, still evades us". There are a number of interrelated causes of the literacy crisis, which universities have to respond to, the first being the ongoing impact of the legacy of apartheid education policies that created an extremely negative environment for literacy development.

Research has also indicated that a large number of students at tertiary institutions across the world have inadequate language skills which impede their development and success. Coetzee Van Rooy and Van Rensburg (2001) who offer evidence that the majority of students entering tertiary education have English language skills below the level of matric second language and therefore do not have sufficient command of English to afford reasonable opportunity to succeed in tertiary education.

Tinto (2000) postulates that if institutions take student retention seriously they should stop tinkering at the margins of institutional academic life and make enhancing students retention the linchpin about which they organise their activities. They should move beyond the provision of add-on service and establish those educational conditions on campus that promote the retention of all, not just some students.

Research points to several types of support that promote learning and retention, in particular academic support. At WSU through placement tests which are administered at the beginning of the year for first-year students, it has been identified that students enter university insufficiently prepared for the rigors of university study. The CLTD due to the above-mentioned challenges offers an array of students' academic support and intervention programmes namely Life Skills, Writing and Reading Course, Peer Assisted Learning previously known as the Supplemental Instruction and the Academic Literacy which this study particularly focuses on. These courses offer much needed support for individual students and groups of students who might otherwise find themselves out of place, in a setting where they are not familiar with. For new students this Centre which offers such valuable support serve as a secure knowledgeable point of entry that enables students to safely navigate the unfamiliar terrain of university.

Tinto (2001) argues that, academic support is effective when it is connected to students' daily learning needs, in ways that enable students to utilize the support they receive to learn and succeed in the classroom in which they are enrolled. He further sums up this argument by saying that students are more likely to learn and persist when they find themselves in settings that hold high expectations for their

learning and provide needed academic support and frequent feedback about their learning. Research suggests that students' academic support plays a vital role at the college level as students often view communication with peers as their primary source of academic support Thompson (2008). Student retention has become one of the most important measures of success for higher education. Tinto (2001) posits that, from the institutional perspective, improving student retention starts with a thorough understanding of the causes behind attrition. Such an understanding is the basis for accurately predicting at-risk students to retain them Dursun (2011). Dursun, using institutional data along with three popular techniques, developed analytical models to predict first years' student attrition of the three model types, artificial neural networks, decision trees and logistic regression. Artificial neural networks performed the best with an 81% overall prediction and accuracy on the holdout sample. The variable importance analysis of the models revealed that the educational and financial variables are the most important among the predictors used in this study.

Lillis (2011) developed an integrative model that posits that the association between the frequency of student-faculty interactions and a students' intent to stay in college is positive, and becomes more positive as faculty emotional intelligence increases. He further claims that patterns of student attrition intentions are observed across different levels of faculty engagement and within and between high and low emotionally intelligent faculty groups. Findings revealed that student faculty interaction predict student attrition intentions more strongly for those students assigned to faculty mentors who possess higher level of emotional intelligence than for those assigned to faculty with lower emotional intelligence scores.

Onsongo (2010) in his article, titled "Assessing the impact of academic support", states that the communication skills course offered at Witwatersrand University as an academic support programme is primarily designed to improve comprehension in English as well as competence in written and spoken English. He further argues that there are many students who are considered to be "right" candidates for academic support. The academic support programme recommended for a student provides increased contact with staff in small group tutorials over an appropriate academic loading the programme recommended for a student provides increased contact with staff in small group tutorials over an appropriate academic loading the programme designed to be challenging and to develop the skills and attitudes necessary for success. The students recommended for academic support are given a chance to appeal against the recommendation. Unfortunately many of them resist the recommendation without giving any acceptable reason to explain their poor academic performance. Some of the students underestimate the academic challenge of the support curriculum and many fail at the end of the year.

Johns (2005) states that higher education institutions expect lecturers to succeed, in an effort to prepare students for any rhetorical or linguistic exigency that may arise, to 'fix' students illiteracies once and for all, so that they can get on with the 'real' academic work. She further argues that instructors need to motivate students to be literacy researchers, open to and prepared for the many social and linguistic forces that may influence their literate lives. If our students are to succeed, however, we cannot work alone. The first-test intervention by the tracking and monitoring team at WSU flags students who fail the first test, as students-risk of academic failure. The students find it difficult to accept that the first tests results in the first test can be used as an indication of the inability to succeed at the end of the year. They consider this procedure as unfair and premature.

A few of them present plausible explanation for their poor performance and give reasonable plans for improvement. However most of them consider it a demotion and humiliation to be declared to be at-risk of academic failure. Onsongo (2010), in his article indicates that a few of the students who refuse academic support manage to pass at the end of the year, most of the students fail one or more courses at the end of the year. Most of them get excluded by the end of the year or they have to repeat the first year. Generally, none of these students ever graduate in four years and many drop out.

Onsongo (2010) finally remarks that if the academic support programmes are considered entirely in isolation and assessed on the basis of the number of graduates they produce, the impact would be minimal. However if the programmes are considered an essential part of improving throughputs especially in the pass rate from the first to the second year, then the process of academic monitoring and assessment of all students throughout the first year has had a remarkable impact. The graduates through the academic support programme are redeemed, students who otherwise were destined to be drop-outs. It has been shown that the continuous academic review process has resulted in a significant impact in pass rates from the first year to the second, within the last six years despite the setbacks experienced in the implementation of the support programmes. Onsongo further states that more efficient uses of academic support programme which should be reviewed positively by both staff and students, coupled with better teaching and learning methods may produce further improvement. However, the decline in the pass rate from second year to third year suggests that appropriate interventions at second year level, need to be considered.

2.4 ACADEMIC DEVELOPMENT AS A BROAD CONCEPT

In South Africa, Academic Development (AD) was introduced into the higher education system in the early 1980's in response to the perceived needs of the then Department of Education, when small numbers of black students entering historically white, liberal universities started to increase. Volbrecht and Boughey (2004) note three 'phases' in the movement since that time. These phases, broadly termed "Academic Support", "Academic Development" and "Institutional Development", are not distinct from each other and are not indicative more of dominant discourses constructing what is appropriate as student support than actual periods of time. The definition of Academic Development as an 'open set of practices concerned with improving the quality of teaching and learning in higher education' offered by Volbrecht and Boughey (2004) attempts to capture this phenomenon with the word 'open', signalling that the student support practices which partly constitute contemporary Academic Development work often stem from very different ideological and discursive positions.

Torr (1991) gives an indication of the discourses underpinning early academic support programmes when she notes that they were 'developed to assist students without the necessary background to be able to benefit immediately from lectures and tutorials'. Key then, to early academic support programmes was a deficit assumption about students they served in the context of an assurance about the 'rightness' of the practices which characterized the institutions to which they had been admitted. Early initiatives were therefore inherently liberal in intent in that they focused on attempting to give black students equal opportunity by filling the gap between their poor socio-economic and educational backgrounds.

Boughey (2005) identifies a number of activities as characteristic of early academic support work, some of which continue to this day. The first area of work concerned, access and admissions, attempts to identify students with the 'potential' to succeed in higher education in spite of their poor scores on the matriculation examination and their disadvantaged backgrounds. Work in this area continues today and has resulted most recently, in the development of the National benchmark Tests (NBTs).

Brew (2004) suggests that academic development "refers to the numerous activities which have to do with the professional learning in post-compulsory tertiary or higher education" and her definition is probably the one most often scribed to internationally.

However, within a South African context, academic development more often refers to "educational development in higher education, that focuses on promoting equity of access and of outcomes" Scott (2006: 1).

At CLTD at WSU we give attention to both aspects because we are involved in both the professional learning of the academic staff and in the academic development of the students.

2.5 ACADEMIC LITERACY AS A SPECIFIC ASPECT OF ACADEMIC DEVELOPMENT

The term 'academic literacy" is complex at a number of levels. Its evolution over a period of time has resulted in it being applied loosely in a variety of situations by those who have not necessarily kept pace with the most recent definitions. Within the higher education context, the appropriate discourse of academic development is academic literacy. Dison (1996) argues that the development of what is called academic literacy is at the heart of the students' ability to succeed at university, applicable to both the first and second language speakers of English. Very narrowly, academic literacy refers to the students' ability to read and write effectively within the university context in order to succeed from one level to another Leibowitz (1995). Leibowitz further points out that a broader definition of the term academic literacy "would include being able to read and write within the academic context with independence, understanding and a level of engagement in the work".

Langer (1987: 2) provides a broader view of literature which is in line with the learning expectations of the higher education context. This socio-cognitive perspective is where literacy can be thought of as a tool in the sense that the focus is not just on reading and writing, but also on the thinking that accomplishes it.

Research has indicated that a large number of students at tertiary institutions across the world have inadequate language skills which impede their development and success. Particularly disconcerting are the results of Coetzee, van Rooy and van Rensburg (2001) who offer evidence that the majority of students entering tertiary education have English language skills below the level of grade 12 second language and therefore do not have sufficient command of English to afford reasonable opportunity to succeed in tertiary education. Research on literacy levels in the South African schooling system indicates a deepening crisis Rose (2004)

Academic Literacy intervention programme in an attempt to address the students' English proficiency needs more than a deficit approach. Where deficit-based practices compelled universities to set their existing values and expectations as the standard and rate many students as not good enough, the cultural theory suggested an understanding of cultural diversity without an input value judgement.

Bourdieu's cultural capital theory (Langdon 2004) applied to students from disadvantaged backgrounds shows that many of these students appear to be unable to position themselves to take advantage of

opportunities available to them at institutions. They do not always have the cultural capital to succeed in higher education, because they were not exposed to effective schooling, learning and studying. According to this theory the institution needs to facilitate the development of appropriate types and levels of cultural capital within the students to improve their chances at success. This was where the CLTD played a role in assisting the institution by infusing Academic Literacy into the Extended programme curriculum.

2.5.1 Different interpretations of Academic Literacy

Kern (2000: 23) notes that Literacy is an elastic concept; its meaning varies according to the disciplinary lens through which one examined it". Weingarter (1993: 14) describes literacy as an ancient proficiency. Baynham (1995:1) further sets out a number of basic premises for literacy. He lists them as follows:Literacy is shaped to serve social purpose in creating and exchanging meaning.

- Literacy is best understood in its context of use.
- Literacy is ideological, like all uses of language, it is neutral. Literacy needs to be understood in terms of social power.
- Literacy can be critical.

"The ideological model acknowledges literacy as a social practice, which is always embedded in socially constructed epistemological principles" Street (2003: 77). According to Street (2003) literacy is recognised as a dynamic concept that will differ from context to context, culture to culture. Ballard and Clandy (1988:8) defined Academic Literacy as a students' capacity to use written language to perform those functions required by the culture in different ways and a level judged to be acceptable by the reader. They argued that language cannot be separated from the culture within which it was being used, and a university has a very distinct culture that frames the way it requires language to function. Bock (1988:25) agreed that in order for students to grasp academic texts, they need to have knowledge of the context and be competent in the language. Lastly, Boughey (2000: 281) provides a later definition of academic literacy that suggests that, "…it involves knowing how to speak and act in academic discourses and that people will acquire such literacy when they participate with others within the discourse." Flippo and Carverly (2008:37) argued that "lecturers needed to socialise newcomers into the academe," which is what the CLTD at WSU attempts to do with its provision of the many support and intervention programmes.

2.5.2 Academic Literacy in the context of the study

Academic literacy in the context of this study is an intervention programme that will enable students to process and interpret information accurately from a variety of sources and by relevant means. It is the key to academic success and will enable students to properly manage all the information that they will be prescribed by the fields of study and course instructors. Through Academic Literacy the student will be conscious of ways of accessing and assessing knowledge in a Higher Education institution and also how to present this knowledge to one's peers and more importantly to lecturers in an academically acceptable way. Students that have been exposed to Academic Literacy will also be able to achieve the stated aims and objectives by meeting the assessment standards of all learning outcomes. In this way each one will be on the right track towards crafting own success.

2.6 ACADEMIC LITERACY DEVELOPMENT

According to Hart (2007) research on literacy levels in South African schooling system indicates a deepening crisis, and the majority of English Second Language learners in South Africa are reading at frustration level. Literacy levels have been eroded, a longitudinal study of functional literacy test results recorded by Year 12 English Second Language applicants to Technikons in the Gauteng province is illustrated below:

Table2. 1: Literate students in Gauteng Province

Year	Number of students	Functionally literate
1990	568	51%
1994	1314	28%
1998	621	20%
2000	451	18%

(**Hough & Horne; 2001**)

These figures in **Table 2. 1** provide powerful evidence of the extent of the crisis in literacy education in South Africa. There are a number of interrelated causes of literacy crisis outlined above which universities have to respond to. The first is the ongoing impact of the legacy of apartheid education policies that created an extremely negative environment for literacy development in schooling in South Africa. Vinjevold (1999) found that teachers also either do not use textbooks, or they use them unsystematically

because of their own poor content knowledge and reading skills. There is thus, a crippling neglect of the basic skills on which the future academic progress of students depends as observed by Taylor and Vinjevold (1999).

2.6.1 International research in academic literacy support in Higher Education

This section focuses on international research in academic literacy support programmes in institutions of higher learning. Although the definitions of academic literacy vary in their complexity and scope researchers and practitioners alike agree that all students not just English learners need explicitly instruction focused on the academic language used in classroom in order to be successful in school and beyond (Oregon 2000). Murray (2010) claims that even where students have advanced English language proficiency, this does not equate to having well developed academic literacy, students may be highly proficient users of English but lack the academic literacies needed to perform well in their studies.

Dean (2004) at Coventry University in the United Kingdom questions where, when and how academic literacy or writing should be taught, because it has long been a concern in higher education globally. This strongly felt need for critical comparisons of writing pedagogy across higher education gave rise to what was termed "The DALic project" .This project is a comparative curriculum development exercise which begun in 2006, involving a group of academic literacy specialists in the UK, the USA and Australia. It was initiated to demonstrate how an established model of practice in teaching/ developing academic literacy works, to apply it in a range of other institutions and to facilitate a gradual furthering of evidence that will be useful to many others in this field, particularly those endeavouring to integrate literacy instruction to disciplinary curricular.

According to Wingate (2009), academic writing is an area that is widely recognised as a decisive factor for student retention and progression. In the Pharmacy Department at the Kings College, London an online course, the Scientific Writing Online Tool (SWOT) was developed. It aimed at enhancing the reading and writing abilities required for academic study and professional work.

In the UK, widening participation has posed a challenge for universities, student numbers have rapidly increased Hassell (2007). According to Lillies (2001) writing is a major challenge for most students entering university. The predominant approach to learning support at UK universities is remedial- based on a "deficit model" of student learning Ivan and Lea (2006). Students who are deemed at risk are sent outside the department to generic study skills courses, often offered in dedicated support units. This extracurricular approach to teaching writing has been frequently criticised as ineffective because writing

cannot be divorced from subject content and knowledge (Lea, Street and Lillis (2006). When writing is taught outside the discipline, students have little opportunity to understand what their discipline requires and what their lectures expect. Therefore as North (2005) puts it, the necessity of teaching writing within the discipline has continually been stressed by researchers of disciplinary genres.

Regarding current understanding of academic literacy, Leki and Braine (2002), describe a range of research studies and argue that academic literacy includes more than just knowledge of discrete language skills or appropriate language use in context. It needs to be understood holistically and includes for example competence in reading, writing, critical thinking, knowledge of independent learning processes, tolerance of ambiguity effective practice of good judgement and development of a deeper sense of personal identity. The concept and discourse of "Developmental Education is specifically North American, while in most other parts of the world, broader terms like Academic Development and learning Assistance are used.

Boylan (2001) suggests that learning assistance has always been a part of university life in the USA since there has always been underprepared students at these institutions. He, for example shows how early admission requirements included a basic literacy in Latin and Greek, in addition to English and thus most students required tutoring prior to attending university. He further shows that by 1889, 80% of American College and universities had college preparatory programmes to assist underprepared students who constituted over half of the student cohort. Informal tutoring and assistance to students were no doubt part of the programme in most Anglophile countries, however unlike in the US, an awareness of the need for specific learning assistance to help students meet the demand of tertiary education, did not truly manifest itself, until the 1980's and the beginning of the reforms demanding universal tertiary education in countries like the UK, Australia, Canada and New Zealand.

Corporate reform in education, including lowering of government per capita expenditure on tertiary education also lead to the active recruitment of foreign students to make up the financial deficit.

In Australia, the Dawkins reforms in education lead to a broader spectrum of Australians entering university as well an increase in the demand for programmes to assist them to meet the expectations of the academy Milne (2000). This change in the number of composition of students admitted to colleges and universities in Anglophile countries coincided with the relaxation of Apartheid policies at South African universities where limited numbers of black students were admitted to English medium universities Boughey (2005).

2.6.2 South African research in academic literacy as a support programme

Pavlich and Orkin (1993) allege that in the early 1980's, the historically white liberal universities began to admit small numbers of black students as a result of relaxed state apartheid policies. In 1993 the apartheid government passed the University Amendment Act (Act 83 0f 1983) also known as the 'Quota Act', in an attempt to control the number of black students these universities could admit, which universities vociferously resisted. Torr (1991) gives an indication of the discourse underpinning early Academic Support Programmes ASP's when she notes that they were developed to assist students without necessary background to be able to benefit immediately from lecturers and tutorials. Early initiatives were therefore inherently liberal in intent in that they focused on attempting to give black students equal opportunity by filling the gap between their poor socio-economic and educational backgrounds and university.

As a result of a review of Academic development literature, Boughey (2005) identifies a number of activities as characteristic of early academic support work, some of which continue to this day. The first area of work concerned access and admissions and attempts to identify students with the potential to succeed in higher education in spite of their poor scores on the matriculation examination and disadvantaged backgrounds. The second area of work identified by Boughey relates to attempts to address the phenomenon. In attempting to assist these 'new' students, South African academics followed the individual "deficit" or remediation policy used in other anglophile countries and described student difficulties as arising out of problems of using English as a second language and sometimes the deprivation of their background Boughey (2005). Although Boughey and McKenna (2004) refer to this new phase as the Academic support phase, they explain that many of the assumptions and practices underlying this phase, are still prevalent in a number of institutions and that the different "phases" of academic development often occurs simultaneously.

Lea and Street (1998) states that these attempts in academic support could be said to subscribe to the study skills' view of academic literacy, as well as the academic socialisation view since they attempt to teach the students' atomised skills along with the academy's prescribed ways of thinking and operating. These support programmes, however are constantly at risk of closure since their "additional" nature makes them vulnerable to budgetary constraints or internal institutional politics, and they are often inadequately staffed with temporary or poorly qualified teachers, housed in poor facilities and their purpose is often ill-defined as denoted by Barefoot, Boylan and Boughey (2005).

Boughey (2005) points out that the focus on the first year experience in developmental education can be contrasted with Academic Developmental phase in South Africa, which meant that the university was

seen as a community of practice into which the students needed to be apprenticed and an end goal of tertiary education, rather than prior to starting the course.

Boughey (2005) identifies a third phase of academic support practises in South Africa, namely the institutional development phase, where the focus is on "best practises" and although support structures common to the academic support or 'Academic developmental phases are still found, they are part of a wider institutional focus on 'quality'. In this model rather like the 'academic literacy's' approach, the focus is on situated literacy, thus it is important for neophytes to be fully involved in their mainstream course in addition to receiving support and development.

Boughey (2005) describes two ways of integrating mainstream and developmental courses, the augmented course, where normal tuition hours are increased and support and development forms part of the course in order to ensure teaching in context and 'half courses' in which courses are run over a longer period of time with more opportunities for support and development.

2.7 ACADEMIC LITERACY; WSU CONTEXT

2.7.1 WSU as an institution

WSU which is a newly merged multi-campus higher education institution, which was established in July 2005, through the merger of Border Technikon, Eastern Cape Technikon and the University of Transkei. It is situated in the second largest province in South Africa and one that is hardest hit by high unemployment and poverty levels. It is a comprehensive university and therefore has university and Technikon access programmes and short courses. As a unique comprehensive University, WSU offers a wealth of academic choices together with articulation and mobility across the qualification spectrum-ranging from certificated to diplomas, degrees and postgraduate studies. Higher education institutions today must ensure their viability and relevance and serve the needs of their clients, the government, commerce and industry and the communities in which they are located. The investment of taxpayers' funds into higher education demands a return in the form of graduates who are equipped to drive the economy.

Strategically situated within the Eastern Cape, WSU straddles a vast spectrum of the urban and rural divide of the region. This provides the university with the means to engage intensely with the drivers of development, so that an appropriate programme and research mix can be formulated that will profile the advantages of both academic and technological programmes.

WSU is a strong, vibrant and viable institution with a host of investment and growth opportunities for research and development partnerships between the academic, governmental, non-governmental and corporate environments. This will guarantee the advancement of the national agenda for protracted delivery. The developmental challenges that confront WSU, amongst others include the holistic development of both academics and learners, provision for concurrent academic support, curriculum development, academic guidance, including career options and institutional support to Further Education and Training (FET) colleges and schools.

2.7.2 The Centre for Learning and Teaching Development (CLTD).

In view of the above, the Centre for Learning and Teaching Development was established to address these developmental challenges, through harnessing new skills, knowledge and attributes in developing the university as a learning organization of the 21st century. The Centre for Learning and Teaching Development therefore enables the University to provide institutional and integrated academic support to learning and teaching as a visible concrete development to the institution's effort towards fulfilling its mission and objectives.

2.7.3 The Extended Studies Unit (ESA): Goals, Objectives and Strategies

ESA focuses on Goal four of the CLTD's goals, objectives and strategies, which is to ensure an effective and efficient system-wide approach to student access and retention by assisting faculties and cooperating with related institutional units. Its first objective is to provide opportunities that promote student access leading to academic success. The second is to promote student retention through a Life Skills curriculum. The third objective is to develop a tracking and monitoring structure for improved learner performance. In its sixth, seventh and eight strategies, the Centre provides retention programmes in academic writing skills, end-user computing skills and academic literacy skills. This section focuses on academic support offered by the Centre for Learning and Teaching Development (CLTD) at Walter Sisulu University (WSU), the Extended Studies Academy (ESA), its goals objectives and strategies, Academic Support development, Academic Literacy. This historical perspective shows the Centre's clearly established role at Walter Sisulu University as an Institution and the purpose of its creation.

2.7.4 Effectiveness of intervention programmes

The question of whether academic literacy courses are effective was raised by Van Dyk (2005). Improving the effectiveness of academic support is perhaps the most important issue confronting universities. Most entering students arrive with academic skills that do not allow them to participate effectively in university first year level courses Perin (2001). There has been much debate as to why

students are not achieving success. Many have suggested that the answer lies in the lack of preparedness among first-year cohorts. Shay (1994:2) states that concerns about the school-leaver applying to universities in South Africa have been voiced for more than a decade now with " increasing numbers of students in the educational system who for reasons of language, socio-economic status, or cultural background, experience serious and persistent problem in interpreting academic tasks. At WSU and also in other higher education institutions, these academic support programmes have been offered in varying forms, but not much in-depth research appear to have been conducted as to the efficacy and appropriateness. Such research has been hindered on a number f levels, by the fact that, as to many variables impact on the student success, it is difficult to relate to success, or lack thereof to a specific intervention.

Many of these students leave or drop-out from university because of academic problems. Thus as Summers (2003) pointed out that many institutions' primary strategy for reducing attrition is the early identification of students likely to drop out and the development and implementation of intervention services for those students.

Todd (2002) argues that academic support programmes need to go beyond limited programmes to programmes such as one-on-one counselling for students in academic difficulty. They also must have a broader mission of engaging the faculty and administration in their academic support mission. He further asserts that, a weak or marginalized academic support programme can have a detrimental effect of enabling a school in continuing a dysfunctional teaching and curriculum structure that creates barriers for many students and prevent their ultimate success.

Smith (2003) posits that, with rising intakes of students from disadvantaged backgrounds, pressure on universities to deal with high failure rate is growing. A multiple pronged strategy that focuses on the various facets of learning such as; teaching styles, content, prior learning, learning environment and background circumstances. Murray (2010: 62) states that if universities are to meet their moral obligation, they need to identify those students at risk and intervene in a timely fashion, in order to ensure that these students have every chance of success as students and as graduates.

2.8 ASSESSMENT OF ACADEMIC PREPAREDNESS

Warren (2002:88) recognise that not all students enter higher education at the same level of preparedness and that guidance may be needed for some students. As mentioned before, universities are faced with underpreparedness of students for tertiary education. Delyser (2003:169) stated her

concern over undergraduate students being underprepared with regard to the writing skills and techniques needed at university level. Thompson and Cronje' (2001:8) also agree on the links of language skills to information literate person. One of the problems faced by many students is a lack of linguistic competency, which handicaps them severely in using information effectively." In South Africa many students, says Hugo (2003:48), do not become literate at school and struggle with basic literacy at tertiary level. A large number lack the ability to perform academically as their skill is not in line with the academic standards of tertiary studies. At university, readers should know how to critically analyse text so that they are able to form their own perception and critically examine the text and apply own concepts and ideas. Most students are insufficiently prepared for the rigors of university study.

Students are more likely to succeed in settings that provide faculty staff and students frequent feedback about their performance. This refers not only to entry assessment of learning skills and the placement that should follow, but also to early warning systems that alert institutions of students who need assistance, so that assistance can be provided early enough to make a difference. How do we then assess academic preparedness of first time university students? Many South African universities have developed selection and placement tests to admit students whose possible ability to succeed may not be reflected in their school leaving results Yeld (2003). A placement test is used to assess students 'ability at the beginning of the course and at the end of a course. These tests do not assume prior knowledge of the topic and instead provide relevant information Yeld (2003). According to Weideman (2006) the purpose of the these tests is to a large extent determined and required by the higher education context of South Africa, in which larger numbers of potentially underprepared students have found their way into tertiary studies. Weideman (2003) further states that these tests are based on the understanding that language is more the parts it is composed of (grammar, vocabulary, sound) and more than the skills through which competence is displayed (listening, speaking, reading and writing. The tests provide several texts with multiple choice questions. The questions attempt to measure the ability to read for meaning, extrapolation and application, inferencing, ability to separate the essential from the non-essential and similar aspects of reading. These tests are not achievements tests for the discipline-specific writing tasks which students have been taught.

2.8.1 Which tests have been used?

The use of Placement tests is a universal practice. Parsad, Lewis and Green (2003) found that 92% of two year institutions use placement tests scores for placement into remedial education. The two tests that dominate the market internationally are the ACCUPLACER and the COMPASS developed by the Board of colleges. The ACCUPLACER suite includes a written essay exam as well as computer adaptive tests

in five areas; sentence skills (20 questions), reading comprehension (20 questions), arithmetic (17 questions), elementary algebra (12 questions) and college level, math (20questions). Similarly, the Compass offers a writing essay as well as untimed computer –adaptive exams in reading, writing skills and mathematics. Both ACCUPLACER and COMPASS offer school the option of including supplementary background questions to collect information such as whether English is the students' first language, whether the student studied algebra in high school, and years since the student's last math class. Other tests that are used internationally are the International English Language Testing (IETS) and the Test of English as a Foreign Language (TOEF).

In South Africa there is a battery of tests that is used by individual institutions and for a variety of purposes. Most of these tests are originally designed at the University of Cape Town as Alternative Access Research Project AARP tests. One of these tests is the Test for Academic Literacy Level (TALL), a test which is used by three South African universities, the University of Pretoria, Stellenbosch University and the North West University. This test provides a reliable and affordable alternative means of assessing the academic literacy of new entrants into the higher education sector. There is also the Placement Test for English Educational Purposes (PTEEP) which is mostly used by the University of Cape Town for students who have applied to any faculty. It incorporates a combination of teaching, modelling and practice elements and opportunities.

The latest is the National Benchmark Test (NBT) which aims at giving information on the ability of prospective students in language, mathematics and numeracy that will supplement the new grade 12 exit examinatiouns.

2.8.2 The SATAP and its origin

The SATAP English test aims at determining the academic literacy skills that entry level students should demonstrate as a predictor of the preparedness and success in tertiary education. It assists in identifying students who might need academic intervention in order to cope with their studies.

These tests are nationally developed by interdisciplinary teams of experts, including academics from WSU and are used by about 12 institutions in the country. The Language SATAP test aims to assess students' abilities in terms of the following:

- To make meaning from the texts that they are likely to encounter in their studies.
- To understand words and discourse signals in their contexts.
- To identify and track academic argument.
- To understand and evaluate the evidential basis of argument.

- To extrapolate and draw inferences and conclusions from what is stated or given.

- To identify main from supporting ideas in the overall organization of a text.

- To understand information presented visually (graphs, tables, and flow charts).

- To understand basic numerical concepts and information used in text, including basic numerical manipulations.

The results of the SATAP indicate that a review of learning, teaching and assessment practices is needed to accommodate the current student profile.

2.8.3 Why was the SATAP chosen?

SATAP tests were chosen by the researcher because they are tests that are officially used by WSU. Also, studies that have been conducted have proven SATAP to be adequate for assessing and predicting future academic performance of first year students at tertiary institutions. One such study entitled "Is the SATAP test an indicator of academic preparedness for first year students" was done at the Cape Peninsula University of Technology CPUT by Scholtz and Allen-lee (2007: 919-939).

The second study by Van Schoor (2010:) also assessed the academic preparedness of distance learning students using SATAP scores. His findings were that SATAP scores provide useful diagnostic information that can be used to develop course materials and to provide students' academic preparedness and contributes to increased success. Therefore SATAP is one of the best tests for testing academic preparedness in first year students it the best to test academic preparedness?

2.9 EXTENDED STUDIES

In line with the strategic planning, CLTD was established with the specific mandate of putting in place learning and teaching developmental strategies and plans. WSU through CLTD, sought to centralise the planning and coordinating function of learning and teaching development while also de-centralising the implementation thereof. This was adopted within the dictates of academic development practice in particular whereby the Centre, as a result of its pedagogic authority, was expected to implement its agenda which one of them is the Extended Programmes Studies. The extended studies programme strives to assist students from educationally disadvantaged backgrounds. This is done through alternative access for students who would not automatically qualify for direct admission. A limited number of students who show potential to succeed are selected and are exposed to a carefully designed supportive learning environment which enhances their ability to succeed. The CLTD comprises of five units. The Continuous Professional Development Unit CPDU, the Education and Training and Innovation Unit ETIU, the Career Development Unit CDU, the Further Education and Training Unit FETU, and lastly the

Extended studies Academy ESA which is the unit that deals specifically with the retention of skills-based academic support programmes which was previously referred to as the Student Academic Development Unit (StAD). One of its main functions is to coordinate and develop skills-based retention programmes such as Academic Literacy, Computer and Information Literacy, Life Skills and the Writing and Reading Centre. It also has a mandate to track and monitor learners' academic performance and provides early intervention which is a shared function with the Career Development Section, in order to increase retention and improve throughputs.

The pro-active student support strategy has six deliverables, which amongst them is to establish periodic review of student progress and undertake proactive interventions, where appropriate, by a member of the student academic development team.

3.0 CONCLUSION

This chapter has presented a theoretical framework that supported the Academic Literacy Intervention (ALI) provided to the first year students in the University with the extended programme option. Various approaches were selected and applied to form this study's theoretical framework. The ALI was developed upon the underlying theories and concepts set by the theoretical framework and conducted by the cooperative effort of the lecturers of the ALI and the personnel of the CLTD at WSU. The research methodology applied in the inquiry to evaluate the effectiveness of the Academic Literacy Intervention programme is discussed in chapter three.

Programme evaluation is an area of applied social science research that has grown rapidly over the past thirty years, and holds great promise to those social scientists who wish to conduct research with high social relevance. Evaluation research in South Africa was relatively unknown until the 1980's, and it is only in the 1990's that social scientists have demonstrated increased interest in the area. Although programme evaluation is not the sort of activity that one can ever get exactly right, it is exhilarating to know that this is not just research for its own sake, but research that makes a difference Martin Terre Blanche & Kevin Durrheim:(2000).

These different forms of evaluation research are often combined in a single evaluation design, directed at quality improvement Unran, Gabor & Grinell: (2001).Kantor, Schomer and Louw used a single group, repeated measures design based on pretesting, post testing and subsequent follow-up of participants in a stress management course, and established significant differences on a number of lifestyle measures.

This research followed the summative kind of evaluation where the same group will be used on pre-test and post-test design, using the SATAP as an experiment treatment.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The purpose for conducting a literature review in the previous chapter was to establish a theoretical foundation for the research that is described in this chapter. It also responded to the research questions raised in chapter 1. It highlights aspects that need to be addressed in the empirical research in relation to the general aims which emerged from the research question A significant amount of research conducted in various countries indicates that language and literacy skills of university entry level students is generally on the decline. This chapter focuses on the methodology of the study which includes the following: the research design, data collection, sampling procedure, the pre-experimental single group pretest -posttest design and the data analysis procedure.

3.2 RATIONALE FOR THE EMPIRICAL RESEARCH

The CLTD at WSU provides an array of academic support, interventions or enrichment programmes, as some Departments refer to them, but there has been only a small pocket of in-depth research conducted on the efficacy and appropriateness of these interventions and support programmes. As Weidman (2003: 1) suggests in his abstract there is much to learn from an external peer or the expert evaluation by a department that concerns itself with the assessment and development of academic literacy because such situations provide an opportunity to step back and reflect on the foundations of one's work and redefine its operational focuses.

The aim of this study therefore was to evaluate whether Academic Literacy, as an intervention programme, has had any effect on the SATAP scores of the first year students admitted to the FSET and subsequently improved the first year students' academic performance. The purpose of the evaluation was also to assist in the subsequent planning and design of the extended studies curriculum by probably exploring the skills gaps identified by this research study.

3.3 RESEARCH DESIGN

According to Babbie and Mouton (2001:55) a research design is a plan or structured framework to solve the research problem and to expand knowledge and understanding. McMillan and Schumacher (2001:599) posit that a research design is a plan that describes the conditions and procedures for collecting and analysing data. Furthermore, Welmen and Kruger (2002: 46) claim that a research design is critical to shed some light on the tenability of the hypothesis".

3.3.1 The pre-experimental design

The research design used in this mini-dissertation was a quantitative pre-experimental design. The quantitative pre-experimental research design was used to determine the students' performance by comparing the marks gained before (pretest) and after (posttest) the academic literacy intervention. The design that was followed is illustrated below;

Table 3.1: The experimental design followed in the study

Design	Pretest	Experiment stage	Posttest	Follow-up
Experimental	SATAP English test administered to all participants	Introduction of an independent variable (Academic Literacy)	Measuring the dependent variable (retesting)	Measuring the characteristics that were analysed

The pedagogical experiment in **Table 3.1** was carried over ten months with the following stages and district sequences:

- The pretest administration
- The pedagogical intervention
- The posttest administration

An advantage of the pre-experimental is that it gives the researcher the opportunity to determine changes after the experiment, by using scores from the pre-tests and the post-tests AllPsych (2004:16). The first SATAP test scores served as baseline scores that were compared to the scores achieved in the same SATAP tests after the intervention of Academic Literacy support programme. The disadvantage of a pre-experimental design is that there is an increased chance of error. "It cannot establish cause and effect and it has no control of the independent variables. It is also difficult to rule out the rival hypothesis with this design" de Vos (2002:320). The results were important indicators to confirm the researchers' quantitatively derived hypotheses.

According to Firestone (1997:16), quantitative research is based on a positivist philosophy, which assumes that there are social facts with an objective reality apart from the beliefs of individuals. Nkobodi (1997:662) also claims that in quantitative research, a large sample can be used; resulting in a more justified claim for a generalization of the results and one can investigate how changes in one variable affect changes in other variables". Using a quantitative approach allows one to measure, describe, compare, classify, analyse and interpret relevant data relating to the effect of Academic Literacy as a support programme on the SATAP scores of first-year students.

3.3.2 The single-group pre-test-post-test design

This pre-experimental design involved a single group pre-test post-test design, which allowed the researcher to determine the impact of an experiment on the participants' pre-tests Neuman (1997:31). The effect was evaluated by looking at the change in performance in the SATAP test administered at the beginning of the year and the one administered after the intervention, at the end of the year. The performance of the participants in the two tests was compared. The research design can be illustrated as follows:

Figure 3.1: Illustration of the single-group pretest-posttest design
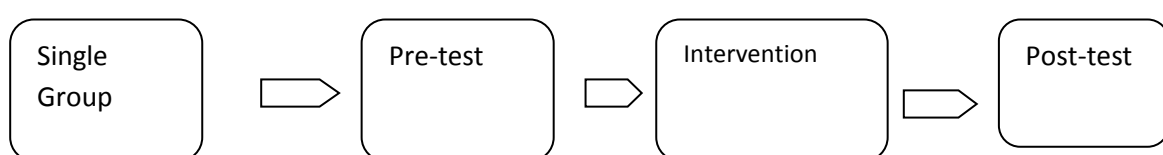
Fig.3.1 illustrates the single-group pretest-posttest design and the reason for using only a single group and excluding the use of a control group, as would be the case in a quasi-experimental design, was the

logistical constraints. The research was conducted in a year. It would have been logistically unfair to divide the group into two because the control group would have been deprived of the opportunity to be exposed to the academic literacy programme, which is a prerequisite in their Faculty. In the single-group pretest -posttest study a pretest had to be included to determine baseline scores. The participants were a group of students admitted to four Departments that had extended their programmes in the Faculty of Science, Engineering and technology (FSET). The number of participants was the standard quota for the Faculty per SATAP seating in a year. The students who could have been a control group were the students who were admitted straight into the mainstream, but according to admissions policy, these students could not be subjected to SATAP writing. The experimental design is illustrated as follows:

3.4. POPULATION OF THE STUDY

According to Welmen and Kruger (2002: 46) " ....a population is the study object which may be individuals, groups, organisation, human products and events or conditions to which they are exposed and to Calder 1996:9 " Population is only accessible if it can be identified and it can only be identified if it is defined. Although the population was defined and identified in this study, permission for access still had to be obtained from the university. The entire target population in the context of this study consisted of all first year students that have been admitted in the FSET, which consists of four Departments namely Civil, Electrical, Building and Mechanical Engineering. These students are selected by their lecturers based on the performance in their grade 12 results.

3.4.1 The sampling procedure

The sampling procedure that was employed in this study was the convenient sampling method. The convenient sampling method is a technique where a group of subjects is selected on the basis of being accessible MacMillan and Schumacher (2006:125). The sample in the context of this study consisted of 120 students who did not obtain very good grades in their matric results. These students were subjected to the SATAP writing procedure. The outcome of these tests will determine which curricular route these students will take between the mainstream and the extended studies programme. The Faculty specifies a quota of students who should be exposed to the tests. This was the group that consisted the sample that was used. As Cresswell (2008) describes convenience sampling, as when the researcher selects participants because they are willing or available, this group therefore was

readily available and was used as the sample of this study. Mugera (2013) also describes convenience sampling, which is sometimes called haphazard or accidental sampling as the most common of all sampling techniques, because, the samples are selected because they are accessible to the researcher. Subjects are chosen simply because they are easy to recruit. The sample of this study is comprised of 120 participants, from the same ethnic group which uses the same language. There are differences in their ages but their educational background is the same. They however had one common experience;being exposed to SATAP writing for placement and diagnostic purposes. The group comprised of both male and female students.

3.5 DATA COLLECTION METHOD

As a means of collecting data the researcher used pre-tests and pos-tests, with the SATAP English test as an instrument. This instrument was appropriate for this type of study as it was primarily quantitative in nature and also had a standardised type of evaluation. According to Yee and Neimer (1996:68) a pre-test and post-test design permits researchers to concentrate on observing and identifying the changes that occur in each participant in a more reliable manner than any other design. This allows researchers to make stronger inferences from the sample to the target population. This study followed a longitudinal panel study that allowed the researcher the advantage of surveying the same sample of students at two moments in time. The researcher was able to how much students had changed between the two points in time, which were before the intervention of the Academic Literacy as a support programme and after the intervention.

Figure 3.1 and 3.2 provide a summary of the data collection methods used to collect data from the SATAP tests:

Table 3.2: Definition of Pretests and Posttests marks

Pre-test mark	Post-test mark
- Mark received for the students' first SATAP English test. - Test was marked before the intervention of academic literacy programme.	- Mark received for the students' second SATAP English test. - Test was marked after the intervention of academic literacy programme

• Test was marked by means of a memorandum.	• Test was marked by means of a memorandum.

Table: 3.3: Illustration of the number of Departments and participants involved

DEPTS	NUMBER of STUDENTS	EXPERIMENT	PERIOD
Building	30	Academic Literacy	9 months
Civil	30	Academic Literacy	9 months
Electrical	30	Academic Literacy	9 months
Mechanical	30	Academic Literacy	9 months
Total	**120**		

3.5.1 The Standardised Assessment Test for Access and Placement (SATAP)

Standardised tests provide uniform procedures for administering and scoring them MacMillan and Schumacher (2006).The same questions are asked each time the test is used and they are usually prepared commercially by measuring experts. Their results are usually objective and relatively uninfluenced by the person administering the instrument.

3.5.2 The academic literacy intervention procedure

The actual Academic Literacy intervention took place over the period of a year. Each week, the Academic Literacy facilitator had a one-hour period on two days in each Department.

3.5.3   Measuring instrument

"**............**measurement refers to the process of describing abstract concepts in terms of specific indicators by assigning numbers or other symbols to these indicators in accordance with specific rules" Sullivan & De Jong in De Vos et al.(2002:166).

The measuring instrument used was the memorandum developed by academics from various institutions in a test development workshop. The students' SATAP's multiple choice questions were marked by the researcher, by comparing the answers given by the students to the answers given in the memorandum. Powell (1997:41) states that "test-retest" correlation is a commonly used method where the researcher uses the "same data collection instrument to observe or collect scores twice for the same group of subjects". The quantitative data collection process was completed.

3.5.4 Challenges encountered

Collecting data over a long period posed some problems to the researcher when the time for writing the post-test came. The study was meant to use the same participants in order to observe any differences in performance after the academic literacy intervention programme had been offered to them. Some participants were lost along the way, some changed courses, others moved to different locations, and yet others no longer wanted to participate, claiming to be busy with preparation for the examinations in their core subjects. The researcher had to pursue them and also persuade them to participate. Fortunately they were all found and the post-tests were administered.

3.5.5 Validity and reliability

The pre-test and post-test design permits researchers to concentrate on observing and identifying the changes that occur in each participant in a more reliable manner than any other design allowing researchers to make stronger inferences from the sample to the target population Yee & Neimer (1996:28). "Longitudinal pretest and posttest design better equips Higher Education researchers to estimate the genuine impact of intervention programmes on educational outcomes" Astin (1991:67).

3.6 DATA ANALYSIS

According to Welmer and Kruger (2002:), researchers proceed inductively and "are inclined to study individual cases carefully, also known as ideographic research, rather than study the average tendencies of large groups as is the case in nomothetic research. Interpretations and discussion were based on the numerical data presented in the Tables and above. Each figure was discussed separately with its accompanying graph. The SPSS Statistical Programme was utilised to analyse the data. Data were entered into a Microsoft Excel spreadsheet for organisational purposes. The statistical test that was used was the *t* test method and *paired* test method. This method of analysis is appropriate for this study as it is a statistical measure that is used to assess quantitative data. The data for this analysis were obtained in the SATAP test scores. Frequency tables were also used to explain the differences between the pre and posttest scores of the four groups.

The interpretation of the test results was based on marks obtained. The changes in percentages were also discussed. Statistical methods such as histograms, averages and percentages were used to compare the different variables. Data scores emerging from the documents were measured.

3.7 ETHICAL ISSUES

Ethical principles were applied as they served to safeguard the dignity, rights, safety and well-being of all the participants in this research study Babbie and Mouton (2002:522).According to Graziano and Raulin (2004:268) participants have the right to make their own decisions but they can only make reasonable decisions if they have the relevant information on which to base their decision, the informed consent principle. The participants were sent a consent form (Appendix A)

3.7.1 Approval for conducting the research

Signed consent was received from the lecturers of Academic Literacy and the Campus coordinator for the Centre for Learning and Teaching Development (CLTD), after sending each a letter briefly explaining the research study process and ethical obligations to be followed. Consent was also requested and received from the programme coordinators of the four departments that participated in the research process.

3.7.2 Informed consent

The participants, namely, first year students in the extended programmes of the Faculty of Science Engineering and Technology and Lecturers of the Academic Literacy wereadequately informed of the aims, process and ethical procedures of the research study. Participation was voluntary and participants held the right to discontinue their participation at any stage of the research project without any penalty. Participants were asked to sign a voluntary consent form that stipulated an understanding of the research in which they would participate and giving the researcher permission to include their inputs in the research study.

3.7.3 Confidentiality and anonymity

All the data that was collected was handled in a professional manner, where neither the participants' names nor any other information that could lead to their identification was disclosed. All data were kept in a safe place under lock and key and will be destroyed two years after completion of the research, as stipulated by university policy.

3.7.4 Deception of participants

Neuman (1997:449) depicts deception of participants as "telling half-truths or lies in order to get individuals to participate in a research". In this study the researcher did not engage in any form of deception regarding the aim, content, practices or nature of this research. It was agreed upon that participants and their institutions would receive feedback on request with regards to the research procedure.

3.7.5 Physical harm, psychological abuse, stress or legal jeopardy

No participant was harmed or abused in any physical, psychological, legal or social manner while participating in this research. The study was conducted within the normal process of students' attendance. Students were not disturbed by the research process; instead, they gained more knowledge from the extra support, than those in the mainstream courses.

3.8 CONCLUSION

The research methodology and design were discussed in detail in this chapter. This study was conducted in order to evaluate whether the academic literacy intervention programme had any effect on the scores of the SATAP English test. The procedure that was followed was the use of pre-tests and post-tests before and after the experiment group was exposed to the Academic Literacy intervention programme over the period of a year. The method of data collection, data analysis and ethical issues were also presented. Data were analysed by means of the SPSS statistical programme. Detailed procedures that were followed have been sufficiently laid out in this chapter. The following chapter presents the results and findings and the scores can be found in Appendix A and B after the final chapter.

CHAPTER 4

DATA PRESENTATION, FINDINGS AND INTERPRETATION OF RESULTS

4.1 INTRODUCTION

The aim of the study was to evaluate the effect of the Academic Literacy intervention programme on the SATAP scores of first year students, by comparing the pre-test and post-test scores of participating first year students and to make recommendations to providers and practitioners of intervention programmes and also to extended studies curriculum designers and developers. This chapter focuses on the research results and the findings of the study. It presents the findings that are gained through the process of quantitative data collection and analysis. This includes the participants' marks obtained for their pre- and post- tests, which highlight changes that occurred in their test performance.

Students completed a test prior to receiving instruction in Academic Literacy, which exposed students to sophisticated forms of accessing and presenting knowledge that is available in the academic world. The dominant quantitative data collection and analysis process was undertaken, in which the students' academic performance was determined by comparing the marks they obtained for the tests before and after the intervention programme. This is a visual presentation of the baseline marks obtained before the experiment. It is important to note that the test scores obtained before the Academic Literacy intervention programme are referred to as pre-tests and the test scores obtained after the Academic Literacy (AL) intervention programme are referred to as post-tests.

The findings are presented in tables as well as charts and inferential statistics. Section 4.2 presents the demographic profile of the participants. The participants were from the departments; building (construction management and quantity surveying), electrical engineering, mechanical engineering and civil engineering. The pretests and post test results will be presented in section 4.3. A comparative analysis of the pre-test and post-test results by department will be presented in section 4.4. The section will start with the overall comparison of the results. Section 4.5 presents the item specification and item

breakdown comparative analysis of the pre-test and post test results. The last section which is 4.6 presents the discussion of results.

4.2   DEMOGRAPHIC PROFILE OF PARTICIPANTS

The study had 120 students participating, 30 from each programme. For the purposes of the study it was necessary to determine the ages and gender of the participants in the experimental group. Thus, this section will describe the participant's age distribution and gender. The data are presented in the form of a frequency table and for clarification; a brief explanation followed each table. Frequency is depicted by *f* and a percentage *by %.*

4.2.1   Age distribution

Close to half of the participants were aged between 18 – 20 years as shown in Table 4.1.
Table 4.1:

Frequency table of the ages of participants in the four Departments

Age	Frequency	%	Rank
18 – 20 years	58	48%	1
21 – 23 years	25	21%	3
Above 23 years old	37	31%	2
	120	**100.0%**	

Table 4.1 shows that most of the participants were between the ages of 18 and 23, which is the appropriate age level for entry to the university. In this study it was found that a noticeable percentage of students were older than 23. Reasons for this could be that they had begun their school career much later than the age of 7, or that they had repeated grades in their previous schooling. It could also be due to their socio-economic situation in their homes.

The distribution of the ages of participants' across the age groups show that the majority were below 24 years of age as depicted by the pie chart in Figure 4.1.

Figure 4.1:   **Pie chart showing percentage distribution of participants by age**
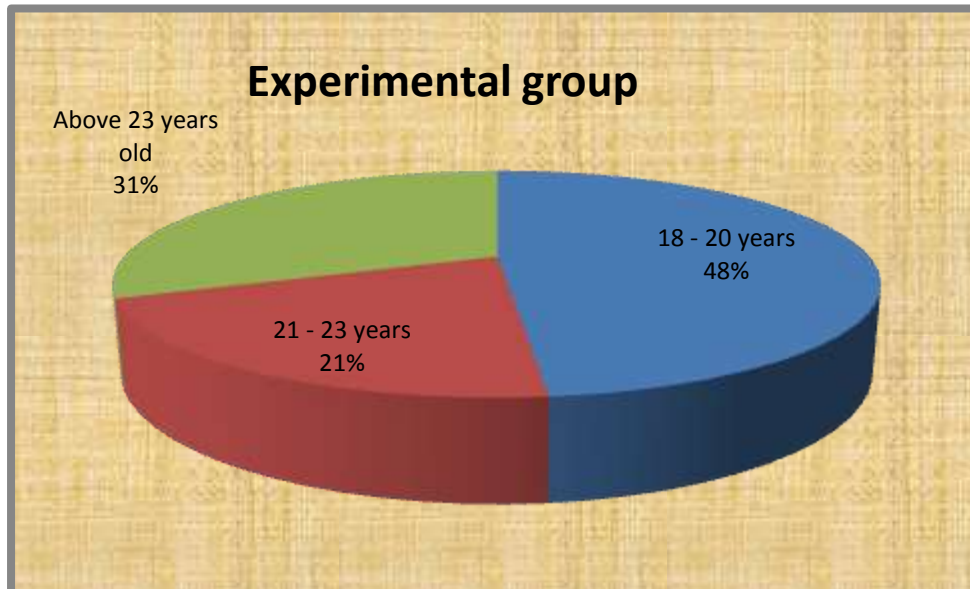

Figure 4.1 is a visual presentation of the demographic item of age. It clearly shows that 21% (25) of the students that enter university are students that should be entering the job market, 48% (58) are between 21-23 years of age while 31% (37) of the students are above 23 years old. This developing trend is a cause for concern and is unfavourable to both the students and the institution. This will result in their joining the job market-very late in their lives.

4.2.2   Gender

Close to 70% of the participants were males as shown in Table 4.2.

Table 4.2: Frequency table of participant's gender in the four Departments

Gender	Frequency	%	Rank
Female	37	31%	2
Male	83	69%	1
	120	**100.0%**	

Table 4.2 indicates that in this experimental group there were more males than females. Nevertheless the distribution was typically representative of the clientele of the first entry level of the (FSET) at WSU. Out of a total of 120 respondents 69% (83) were male and 31% (37) were female. However, this does not match the gender breakdown of the overall student population in general at WSU. The general gender distribution in the university show more females than males.

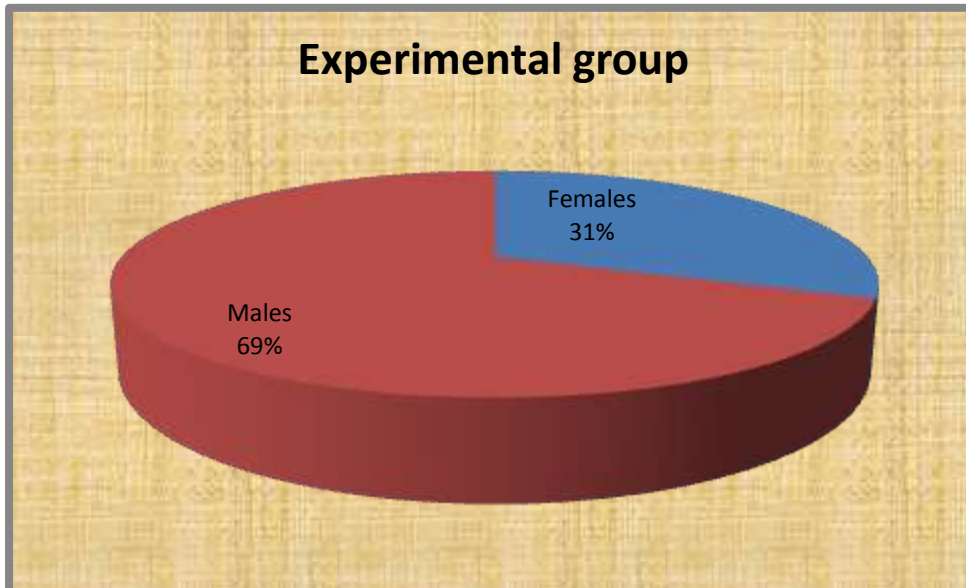**Figure 4.2:   Pie chart showing percentage distribution of participants by gender**

Figure 4.2 is a visual presentation of the demographic item of gender. This study found that the Faculty of Science, Engineering and Technology (FSET) is male dominated. This distribution was typically representative of the gender distribution in the Engineering Departments.

4.3   COMPARATIVE ANALYSIS OF PRETEST AND POSTTEST RESULTS OF PARTICIPANTS

The test marks obtained before the academic Literacy intervention are referred to as pre-tests and those after the intervention as post-tests.

4.3.1   Pre-test and post-test scores of participants

Table 4.3 indicates the pre -tests and post test scores of the participants.

Table 4.3:   Frequency table of pre-test and post-test scores with percentages

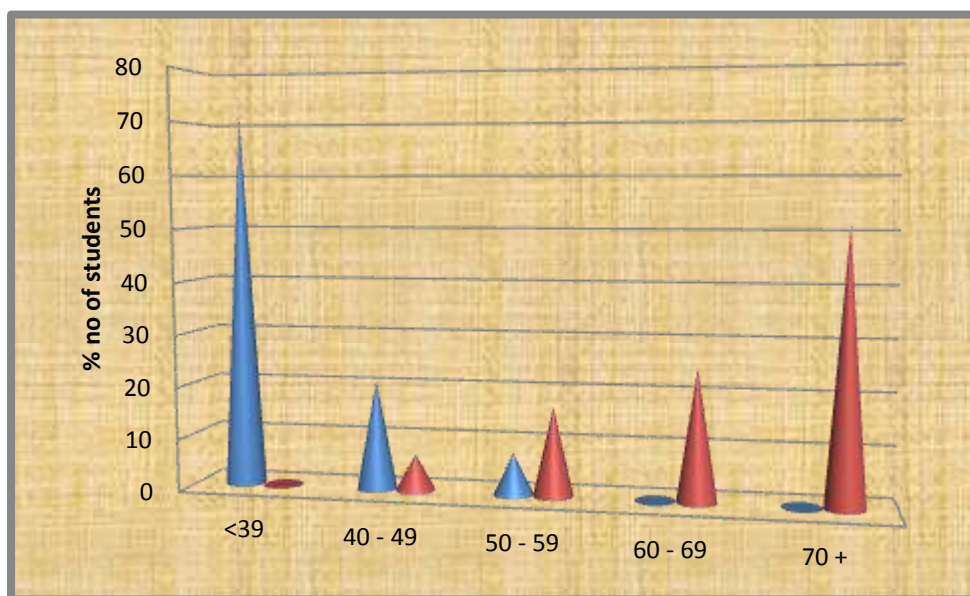| Score range	Pre-test		Post-test	
	Frequency	%	Frequency	%
< 39	85	71%	-	-
40 – 49	25	21%	8	7%
50 – 59	10	8%	20	17%
60 – 69	-	-	30	25%
70+	-	-	62	51%
	120	**100.0%**	**120**	**100.0%**

This table was drawn to give a visual presentation of the marks obtained in the pre- test before the Academic Literacy intervention programme and the post- tests results after the intervention of Academic Literacy support programme. These were results in Table 4.3 indicate that there was a noticeable mark increase in the post-test scores compared to the pre-test scores. Most students had moved from the low score ranges to the upper ones.

Table 4.3 above indicates the percentage of participant students who obtained scores in the different scoring ranges of the SATAP English Test. It indicates that the percentage scores of students who passed increased from 8% to 93%, thus giving an indication that the intervention had played a very positive role on their SATAP scoring. The score range 70+ increased by 62% which was the most improved range. Thus, in the post intervention test, the highest number of students fall within the 70> score range, indicating a significant improvement in the performance of the participants. This further indicates that the

participants may now be better prepared for the academic rigors of higher education. The 40-49 score range is the only one that showed a decrease of 14 %. Only 7% of the participants in the post-tests fell in the 40-49 range.

The illustration of the distribution of scores is shown in Figure 4.3.

Figure 4.3:   Multiple bar chart illustrating the pre-test and post-test score ranges received by the 120 participant students

The findings in Figure 4.3 indicate how the participants scored in the pre-test and post-test. This figure presents the distribution of scores in five score ranges. For the pre-test the study found that 71% (85) of the students scored below 40% in the SATAP English test, 21% (25) of the participants scored in the 40-49 score range and only 8% (10) scored above 50%. This paints a bleak picture for the both the throughput and retention rate of the FSET. This could be a result of the discrepancies and inequities in their previous schooling systems. These students may have come from a schooling background that was characterised by under-resourcing, inappropriate approaches to learning and teaching or socio economic inadequacies.

In terms of the post-test all participants scored higher marks than in the pre-intervention tests as depicted in Figure 4.3. 51% (62) of the participants scored above 70%, 25% (30) scored in the score range of 60-69, whilst 17% (20) scored in the in 50-59 range. Only 7% (8) scored in the 40-49 score range, below 40.

4.3.2   Descriptive and inferential statistics of pre-test and post-test scores

This section presents the comparative analysis of the pre-test and post-test scores for the overall group and also by department. Data analysis consists of the following approach:

•   **Descriptive statistics**: This approach depicts the preliminary analysis of the data collected for the research. The summary measures used to describe the data include the summary measures like the mean, median, standard deviation, the range and etc.

•   **Normality tests and plots:** Normality tests and plots were done to determine whether the data was normally distributed or not. The approach was undertaken to determine whether parametric or non-parametric tests can be used to compare means across the paired data.

•   **Paired t-tests:** A matched pair test is done when repeated observations are taken from the same object. A matched paired t-test is done when one wants to find difference in means between two related samples when data is normally distributed and data is measured on an interval or ratio scale.

The assumptions are:

Assumption 1: The paired differences are independent.

Assumption 2: The paired differences are all identically normally distributed (same mean and variance)

In this case the paired t-test was used to determine difference between pre-test and post-test scores when data was normally distributed. The null hypothesis to be tested was:

H_o: The mean difference between pairs is zero

H_a: The mean difference is not zero

Thus the null Hypothesis (H_o) states that there was no change in the pre- and post-test scores, and there is no statistically significance/difference between the means of the pre-test and post-test scores whilst the alternative Hypothesis (H_a) states that there was a change in the pre-test and post test scores, and there is a statistically significant/difference between the means of the pre-test and post-test scores.

To test the hypothesis, the paired t-test was performed through the Statistical Package for Social Sciences (SPSS). The paired t-test is used to compare the values of means from two related samples, for example in a 'before (pre-test) and after (post-test)' scenario. The difference between the means of the samples is unlikely to be equal to zero (due to sampling variation) and the hypothesis test is designed to answer the question "is the observed difference sufficiently large to indicate that the null hypothesis or alternative hypothesis is true?" Each hypothesis is carried out under a section.

4.3.2.1 Descriptive and inferential statistics of pre-test and post-test scores of all participants

The summary statistics for the pre-event and post-events for all participants are shown in Table 4.4.

| Table 4.4: Summary statistics of pre-test and post-test scores as a percentage for all participants			
Summary Statistics	**Score**		
	Pre-test	**Post-test**	**d_i=Mark change**
Mean	32.88	58.24	25.36
Median	31.25	57.81	25.00
Standard deviation	10.43	11.45	9.85
Skewness	0.379	0.031	-0.351
Kurtosis	-0.985	-0.827	1.004
Maximum	54.69	84.38	54.69
Minimum	17.19	34.38	-7.81

Range	37.50	50.00	62.50
Coefficient of variation	31.72	19.66	38.84

The minimum and maximum scores for the pre-test were 17.19 and 54.69 respectively. The arithmetic mean was 32.88 with a standard deviation of 10.43.

The minimum and maximum for the post-test were 84.38 and 34.38 respectively. The mean was 58.24 with a standard deviation of 11.45. In terms of the difference, the minimum and maximum values were -7.81 and 54.69 respectively. The mean difference average was 25.36. This is far off from zero and thus the null hypothesis of mean difference being zero might be rejected. The coefficients of variation were 31.72%, 19.66% and 38.84% for the pre-test, post-test and differences respectively. Thus, there was large variability in the differences.

The histogram and box plot of the differences are given in Figure 4.4.

Figure 4.4: Histogram and box plot showing distribution of mean difference for all participants
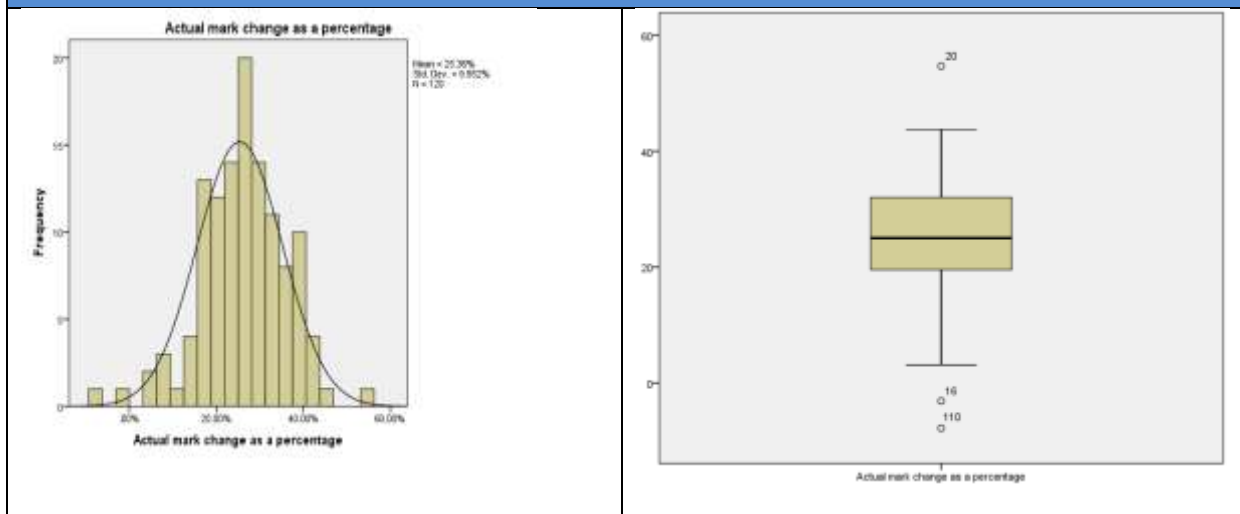
The data is normally distributed. The Shapiro-Wilk test for normality gave a p-value = 0.101 indicating that the data was normally distributed.

An error bar was constructed to determine whether the confidence intervals for the mean overlap. The information is shown in Figure 4.5.

Figure 4.5: Mean difference 95% confidence interval error bars for all participants
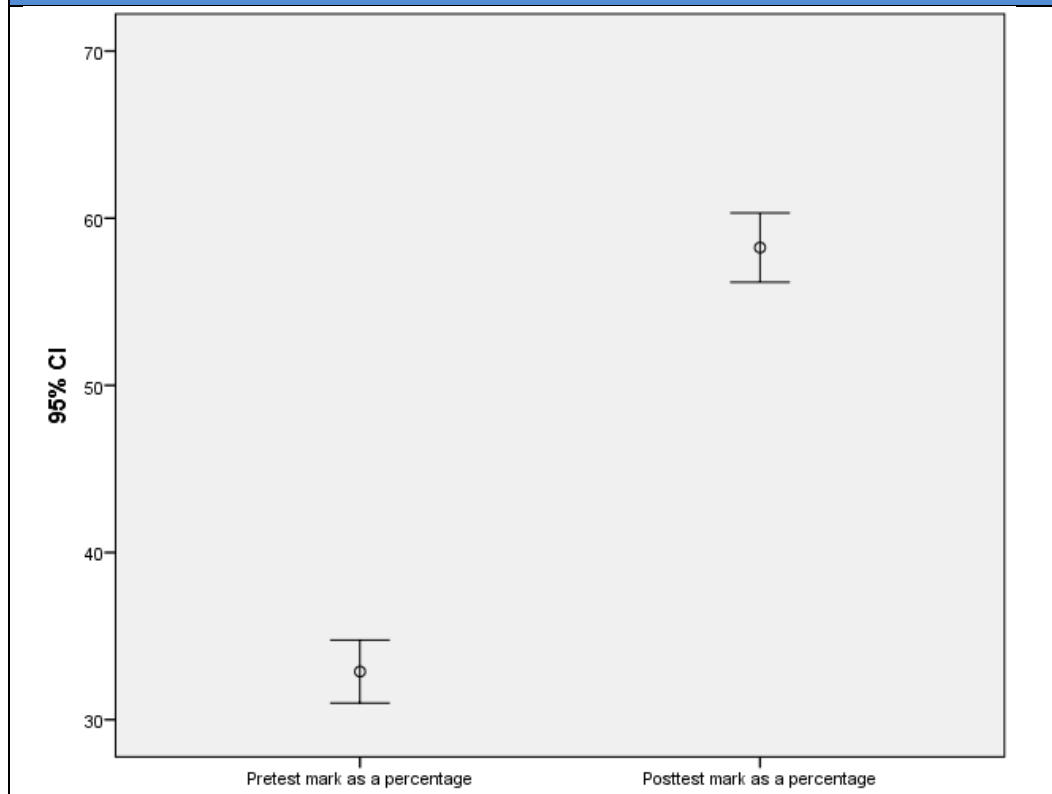
The confidence intervals do not overlap. At 95% confidence interval, one can conclude from the intervals that the mean score of pre-test is significantly lower than the post test. This mean that the intervention had an impact on the performance of the participants as can be seen from the 95% confidence interval of the means which do not overlap. Since data was normally distributed, the paired t-test was used to test the hypothesis whether the means are the same. The hypothesis was:

H_o: $\mu_d = 0$

H_1: $\mu_d \neq 0$

The following output was obtained.

Table 4.5: Hypothesis testing – Paired samples t-test statistics for all participants

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest mark as a percentage	58.2422%	120	11.45329%	1.04554%
	Pretest mark as a percentage	32.8776%	120	10.43232%	0.95234%

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Posttest mark as a percentage & Pretest mark as a percentage	120	.598	.000

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Posttest mark as a percentage - Pretest mark as a percentage	25.36458%	9.85245%	0.89940%	23.58368%	27.14549%	28.202	119	.000

The mean difference post-test – pre-test) was 25.36. The standard deviation (SD) of the difference was 9.856.

The hypothesis gave a **t-value = 28.202** with a **p-value = 0.000**. This p-value (Sig. (2-tailed) also confirms whether two means of pre-test and post-test are statistically different. If the Sig (2-tailed) value was greater than 0.05 we would conclude that there is no statistically significant difference between the two means. If the sig (2-tailed) value was less than or equal to 0.05 we would conclude that there is a statistically significant difference between the two means.

In table 4.5 above, the Sig. (2-tailed) value is 0.000; this value is less than 0.05. Because of this, we can conclude that there is a statistically significant difference between the means of pre-test and post-test. Since the paired samples statistics revealed that the mean for the post test was greater than the mean for the pre-test, we can conclude there was a change in the pre- and post-test scores, and there is a statistically significant difference between the means of the pre-test and post-test scores; thus, the

null hypothesis of equal means was rejected. The 95% confidence interval for the mean difference μ_d was 23.58 to 27.15 which does not include zero signifying mean differences. The above results from the quantitative pre-experimental design indicated an improved performance of participants from the pre- to the post-test scores. There was also an improvement in the performance of the majority of students, where the marks generally increased from the first and the last assessment of all participants.

4.3.2.2 Descriptive and inferential statistics of pre-test and post-test scores of the building (construction, management and quantity survey) department

The summary statistics for the pre-event and post-events for the building department are shown in Table 4.6.

Table 4.6: Summary statistics of pre-test and post-test scores as a percentage for the building (construction, management and quality survey) department			
Summary Statistics	Score		
	Pre-test	Post-test	d_i=Mark change
Mean	34.32	63.80	29.48
Median	32.81	65.62	28.13
Standard deviation	10.02	9.49	11.11
Skewness	0.094	-0.660	-0.488
Kurtosis	-1.004	0.615	1.683
Maximum	34.00	84.38	54.69
Minimum	12.00	42.19	-3.12
Range	22,00	42.19	57.81
Coefficient of variation	29.20	14.87	37.69

The minimum and maximum scores for the pre-test were 34 and 12 respectively resulting in a range of 22. The arithmetic mean was 34.32 with a standard deviation of 10.02. Thus before intervention students had an average of 34%. It was slightly higher than the mean for all programmes.

The minimum and maximum scores for the post-test were 84.38 and 42.19 respectively. The mean was 63.80 with a standard deviation of 9.49. After the intervention, the participants from the building department had an average of approximately 64%. In terms of the difference, the minimum and maximum values were -3.12 and 57.81 respectively. The mean difference average was 29.48. This was far off from zero and thus the null hypothesis of mean difference being zero might be rejected. The coefficients of variation were 29.20%, 14.87% and 37.69% for the pre-test, post-test and differences respectively. Thus, there was large variability in the differences.

The histogram and box plot of the differences are given in Figure 4.6.

Figure 4.6: Histogram and box plot showing distribution of mean difference for the building department participants
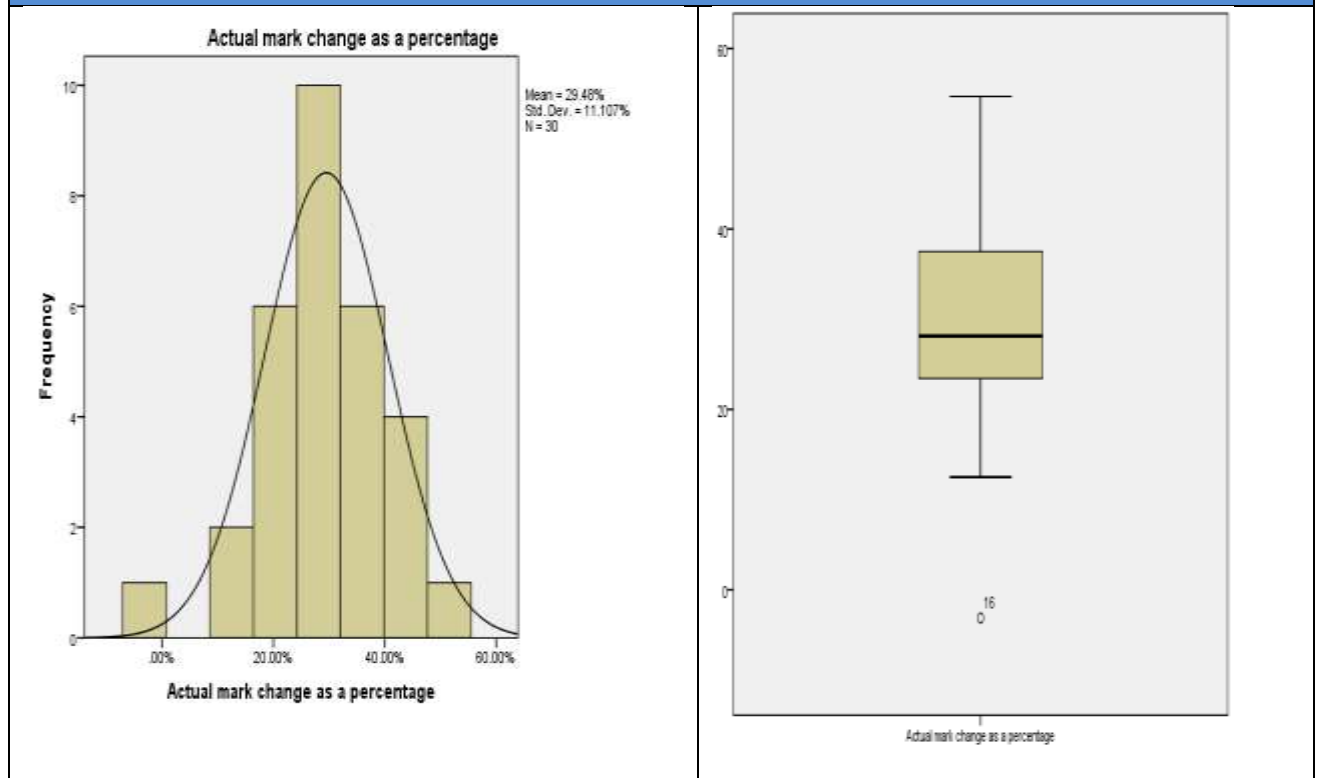
The Shapiro-Wilk test gave a p-value = 0.305 indicating that the data was normally distributed. However there was a potential outlier to the left as depicted in the boxplot in Figure 4.6.

An error bar was constructed to determine whether the confidence intervals for the mean overlap. The information is shown in Figure 4.7.

Figure 4.7: Mean difference 95% confidence interval error bars for the building department participants
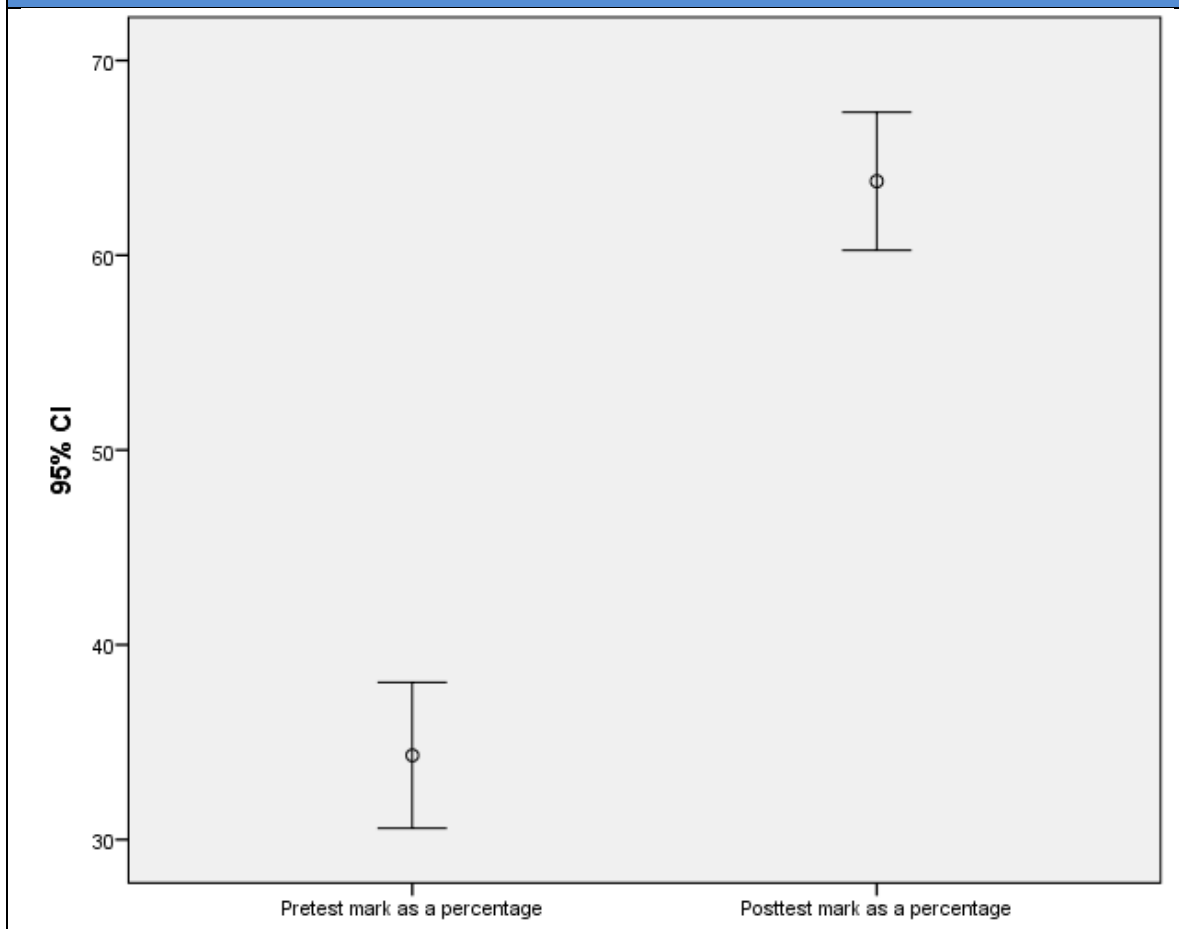
The confidence intervals do not overlap. At 95% confidence interval, one can conclude from the intervals that the mean score of pre-test is significantly lower than the post test. This means that the intervention had an impact on the performance of the building department participants as can be seen from the 95% confidence interval of the means which do not overlap.

Since data was normally distributed, the paired t-test was used to test the hypothesis whether the means are the same. The hypothesis was:

H_o: $\mu_d = 0$

H_1: $\mu_d \neq 0$

The following output was obtained.

Table 4.7: Hypothesis testing – Paired samples t-test statistics for the building departmental participants

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest mark as a percentage	63.8021%	30	9.49176%	1.73295%
	Pretest mark as a percentage	34.3229%	30	10.02995%	1.83121%

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Posttest mark as a percentage & Pretest mark as a percentage	30	.354	.055

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Posttest mark as a percentage - Pretest mark as a percentage	29.47917%	11.10731%	2.02791%	25.33163%	33.62671%	14.537	29	.000

The mean difference (post-test – pre-test) is 29.48. The standard deviation (SD) of the difference is 11.11.

The hypothesis gave a **t-value = 14.537** with a **p-value = 0.000**. It is highly significant. Since p- value is less than 0.05, the null hypothesis of mean difference zero was rejected at the 5% level of significance and concluded that there was a statistically significant difference between the means of pre-test and post-test. Since the mean for the post test was greater than the mean for the pre-test, we can conclude there was a change in the pre- and post-test scores, and there is a statistically significant/difference between the means of the building department participants. The 95% confidence interval for the mean difference μd was 25.33 to 33.63. this does not include zero signifying mean differences. It shows that on the average a participant improved by at least 25 marks.

4.3.2.3 Descriptive and inferential statistics of pre-test and post-test scores of the electrical engineering department

The summary statistics for the pre-event and post-events for the electrical engineering department are shown in Table 4.8.

Table 4.8: Summary statistics of pre-test and post-test scores as a percentage for the electrical engineering department			
Summary Statistics	Score		
	Pre-test	Post-test	d_i=Mark change
Mean	31.82	59.32	27.50
Median	29.69	60.93	28.13
Standard deviation	9.67	10.12	6.71
Skewness	0.631	-0.308	-0.223
Kurtosis	-0.429	-0.788	-1.028
Maximum	54.69	75.00	39.06
Minimum	18.75	39.06	15.63
Range	35.94	35.94	23.44
Coefficient of variation	30.39	17.06	24.40

The minimum and maximum scores for the pre-test were 18.75 and 54.69 respectively resulting in a range of 35.94. The arithmetic mean was 31.82 with a standard deviation of 9.67 giving a coefficient of variation of 30.39%. It can be noted that before intervention students had an average of 32% in the electrical engineering department.

The minimum and maximum for the post-test were 75 and 39.06 respectively. The mean was 59.32 with a standard deviation of 10.12 giving a coefficient of variation of 17.06%. After the intervention, the participants from the electrical engineering department had an average of approximately 59%. In terms

of the difference, the minimum and maximum values were 15.63 and 39.06 respectively. The mean difference average was 27.5. This was far off from zero and thus the null hypothesis of mean difference being zero might be rejected. The coefficient of variation of the mean difference was 24.40. There was large variability in the pre-test scores.

The histogram and box plot of the differences are given in Figure 4.8.

Figure 4.8: Histogram and box plot showing distribution of mean difference for the electrical department participants
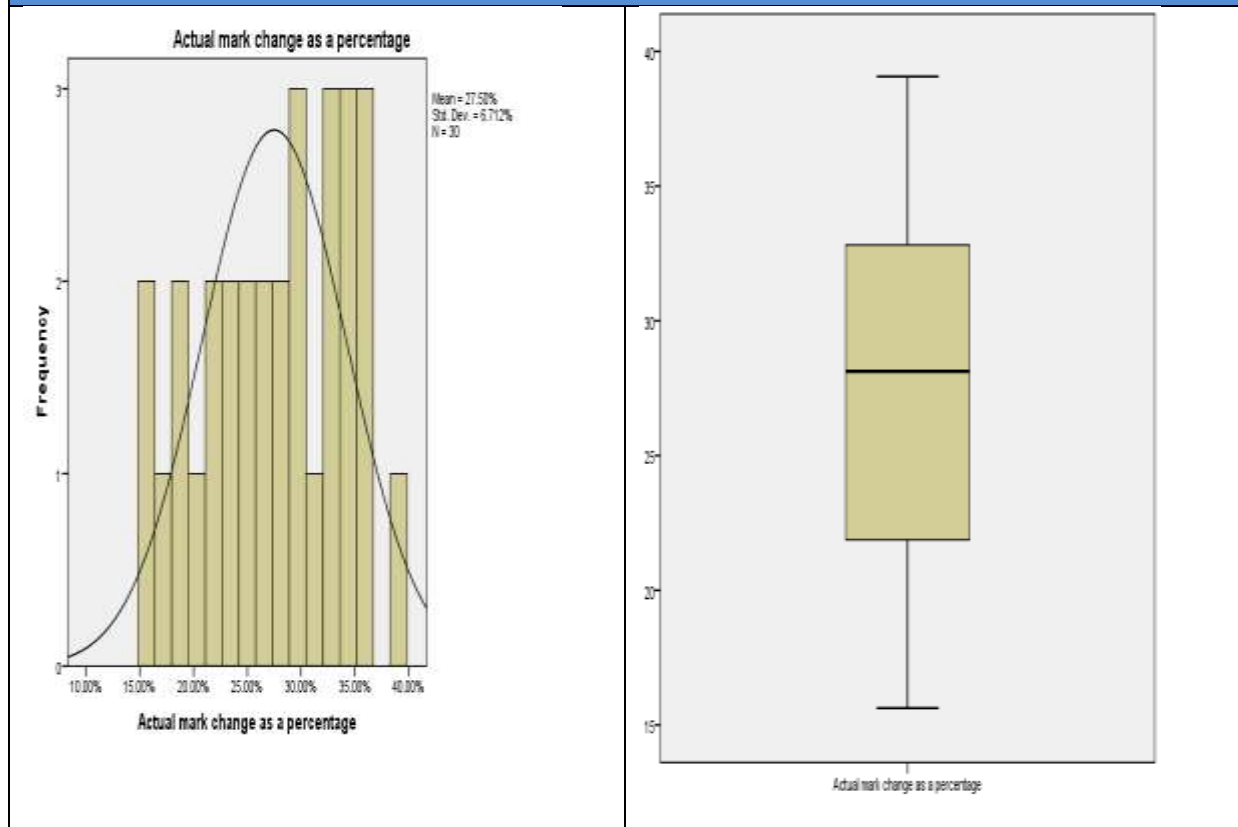
The Shapiro-Wilk test gave a p-value = 0.253 indicating that the data was normally distributed.

An error bar was constructed to determine whether the confidence intervals for the mean overlap. The information is shown in Figure 4.9.

Figure 4.9: Mean difference 95% confidence interval error bars for the electrical engineering department participants
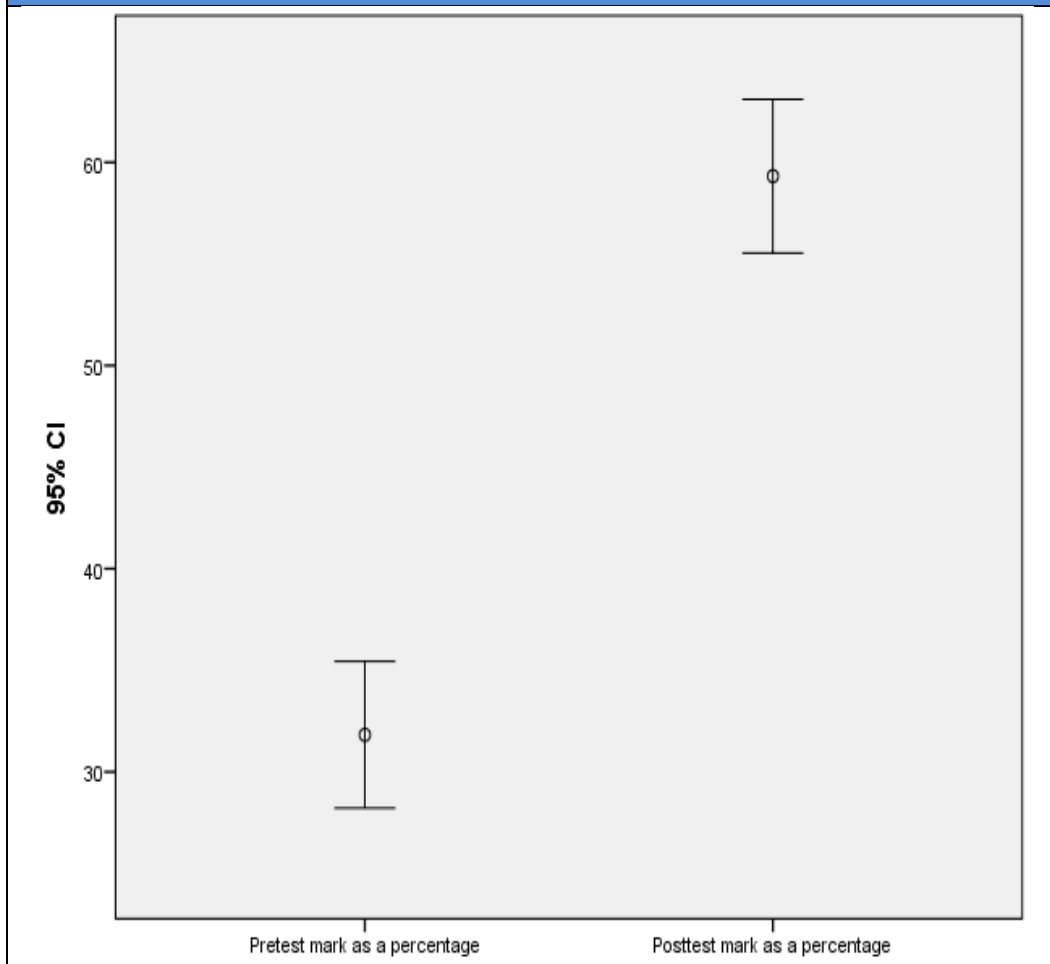
The confidence intervals do not overlap. At 95% confidence interval, one can conclude from the intervals that the mean score of pre-test is significantly lower than the post test. This mean that the intervention had an impact on the performance of the electrical engineering department participants as can be seen from the 95% confidence interval of the means which do not overlap.

 The paired t-test was used to test the hypothesis whether the means are the same. The hypothesis was:

H_o: $\mu_d = 0$

H_1: $\mu_d \neq 0$

The following output was obtained.

Table 4.9: Hypothesis testing – Paired samples t-test statistics for the electrical engineering departmental participants

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest mark as a percentage	59.3229%	30	10.12186%	1.84799%
	Pretest mark as a percentage	31.8229%	30	9.67100%	1.76568%

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Posttest mark as a percentage & Pretest mark as a percentage	30	.771	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	Posttest mark as a percentage - Pretest mark as a percentage	27.50000%	6.71242%	1.22551%	24.99354%	30.00646%	22.440	29	.000

The mean difference (post-test – pre-test) is 27.5. The standard deviation (SD) of the difference is 6.71. The hypothesis gave a **t-value = 22.44** with a **p-value = 0.000**. It is highly significant. Since p- value is less than 0.05, the null hypothesis of mean difference zero was rejected at the 5% level of significance and concluded that there was a statistically significant difference between the means of pre-test and post-test for electrical engineering department. The 95% confidence interval for the mean difference μ_d was 24.99 to 30.00. Since zero is not contained in the interval we confirm that the means are different. The electrical engineering participants improved by at least 25 marks.

4.3.2.4 Descriptive and inferential statistics of pre-test and post-test scores for the mechanical engineering participants

The summary statistics for the pre-event and post-events for the participants are shown in Table 4.10.

Summary Statistics	Score		
	Pre-test	Post-test	d_i=Mark change
Mean	32.66	57.08	24.43
Median	29.69	53.91	25.00
Standard deviation	11.43	13.82	7.41
Skewness	0.394	0.412	0.189
Kurtosis	-1.190	-0.973	-0.845
Maximum	53.13	81.25	39.06
Minimum	17.19	34.38	12.50
Range	35.94	46.88	26.56
Coefficient of variation	35.00	19.66	30.33

Table 4.10: Summary statistics of pre-test and post-test scores as a percentage for the mechanical engineering participants

The minimum and maximum scores for the pre-test were 17.19 and 53.13 respectively. The arithmetic mean was 32.66 with a standard deviation of 11.43.

The minimum and maximum for the post-test were 81.25 and 34.38 respectively. The mean was 57.04 with a standard deviation of 13.82. In terms of the difference, the minimum and maximum values were 12.50 and 39.06 respectively. The mean difference average was 24.43. It was lower than the overall mean. This is far off from zero and thus the null hypothesis of mean difference being zero might be rejected. The coefficients of variation were 35.94%, 46.88% and 26.56% for the pre-test, post-test and differences respectively. Thus, there was large variability in the post-test.

The histogram and box plot of the differences are given in Figure 4.10.

Figure 4.10: Histogram and box plot showing distribution of mean difference for the mechanical engineering participants
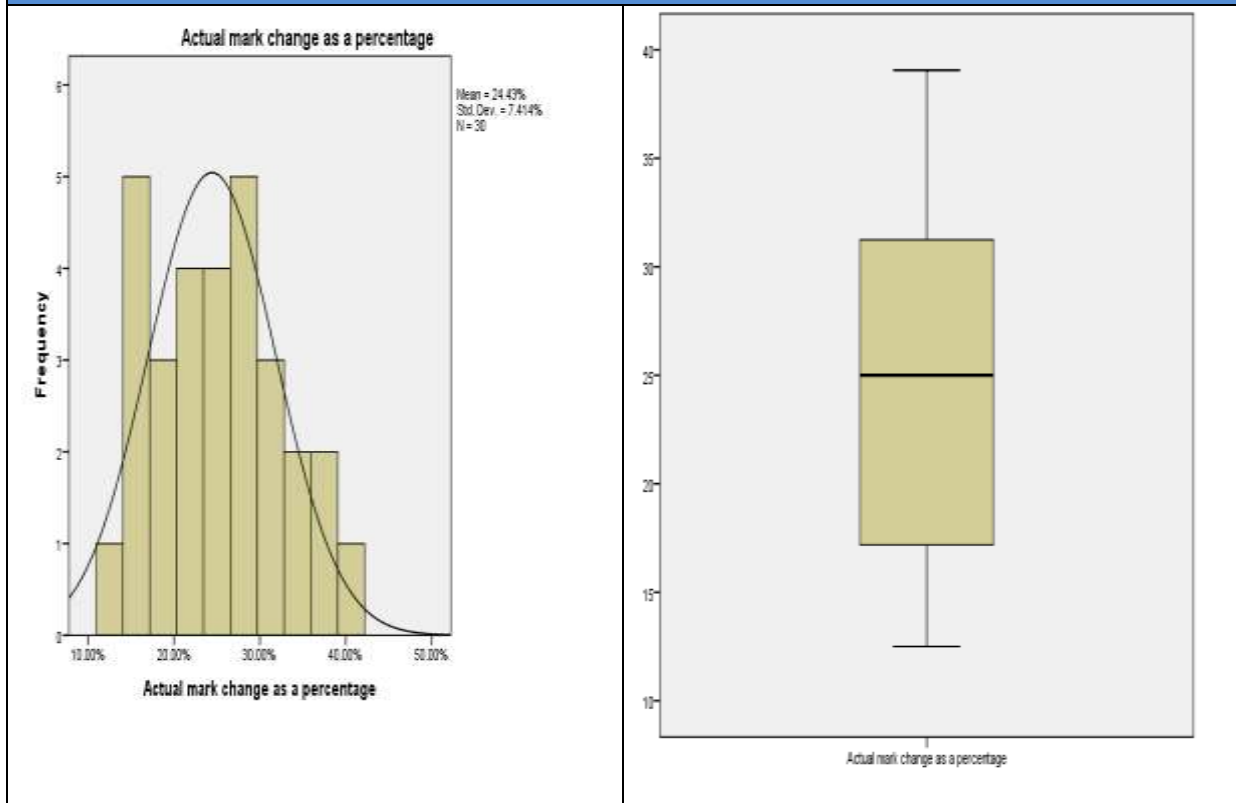
The data is normally distributed. The Shapiro-Wilk test for normality gave a p-value = 0.331 indicating that the data was normally distributed.

An error bar was constructed to determine whether the confidence intervals for the mean overlap. The information is shown in Figure 4.11.

Figure 4.11: Mean difference 95% confidence interval error bars for mechanical engineering department participants
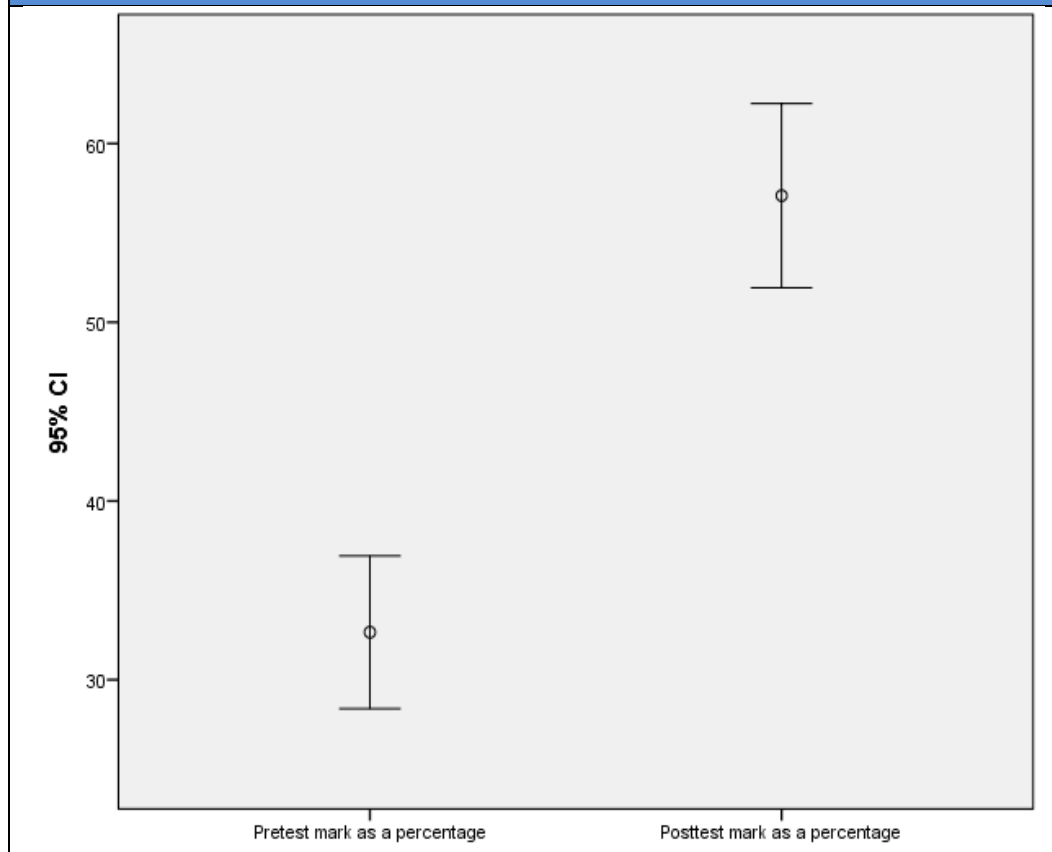
The confidence intervals do not overlap. At 95% confidence interval, one can conclude from the intervals that the mean score of pre-test is significantly lower than the post test. This mean that the intervention had an impact on the performance of the mechanical engineering department participants as can be seen from the 95% confidence interval of the means which do not overlap.

Since data was normally distributed, the paired t-test was used to test the hypothesis whether the means are the same. The hypothesis was:

H_o: $\mu_d = 0$

$$H_1: \quad \mu_d \neq 0$$

The following output was obtained.

Table 4.11: Hypothesis testing – Paired samples t-test statistics for the mechanical engineering department participants

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest mark as a percentage	57.0833%	30	13.81629%	2.52250%
	Pretest mark as a percentage	32.6563%	30	11.43312%	2.08739%

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Posttest mark as a percentage & Pretest mark as a percentage	30	.844	.000

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Posttest mark as a percentage - Pretest mark as a percentage	24.42708%	7.41424%	1.35365%	21.65856%	27.19561%	18.045	29	.000

The mean difference post-test – pre-test) was 24.43. The standard deviation (SD) of the difference was 7.41.

The hypothesis gave a **t-value = 18.045** with a **p-value = 0.000**. It is highly significant. The Sig. (2-tailed) value is 0.000; this value is less than 0.05. Because of this, we can conclude that there is a statistically significant difference between the means of pre-test and post-test for the mechanical engineering. Since the paired samples statistics revealed that the mean for the post test was greater than the mean for the pre-test, we can conclude there was a change in the pre- and post-test scores, and there is a statistically significant/difference between the means of the pre-test and post-test scores; thus, the null hypothesis of equal means was rejected. The 95% confidence interval for the

mean difference μ_d was 21.66 to 27.20 which does not include zero signifying mean differences. The above results from the quantitative pre-experimental design indicated an improved performance of mechanical engineering participants from the pre- to the post-test scores. There was also an improvement in the performance of the majority of students, where the marks generally increased from the first and the last assessment of all participants.

4.3.2.5 Descriptive and inferential statistics of pre-test and post-test scores for the civil engineering participants

The summary statistics for the pre-event and post-events for the participants are shown in Table 4.12.

Table 4.12: Summary statistics of pre-test and post-test scores as a percentage for the civil engineering participants			
Summary Statistics	Score		
	Pre-test	Post-test	d_i=Mark change
Mean	32.71	52.76	20.05
Median	30.47	53.13	20.31
Standard deviation	10.88	9.44	11.07
Skewness	0.473	0.367	-0.292
Kurtosis	-0.910	-0.199	0.368
Maximum	54.69	75.00	40.63
Minimum	17.19	35.94	-7.81
Range	37.50	39.06	48.44
Coefficient of variation	33.26	17.89	55.21

The minimum and maximum scores for the pre-test were 17.19 and 54.69 respectively. The arithmetic mean was 32.71 with a standard deviation of 10.88 giving a coefficient of variation of 33.26. The minimum and maximum for the post-test were 75and 35.94 respectively. The mean was 52.76 with a standard deviation of 9.44 giving a coefficient of variation of 17.89. In terms of the difference, the

minimum and maximum values were -7.81 and 40.63 respectively. The mean difference average was 20.05. This is far off from zero and thus the null hypothesis of mean difference being zero might be rejected. There was large variability in the differences.

The histogram and box plot of the differences are given in Figure 4.12.

Figure 4.12: Histogram and box plot showing distribution of mean difference for the civil engineering department participants

AZ
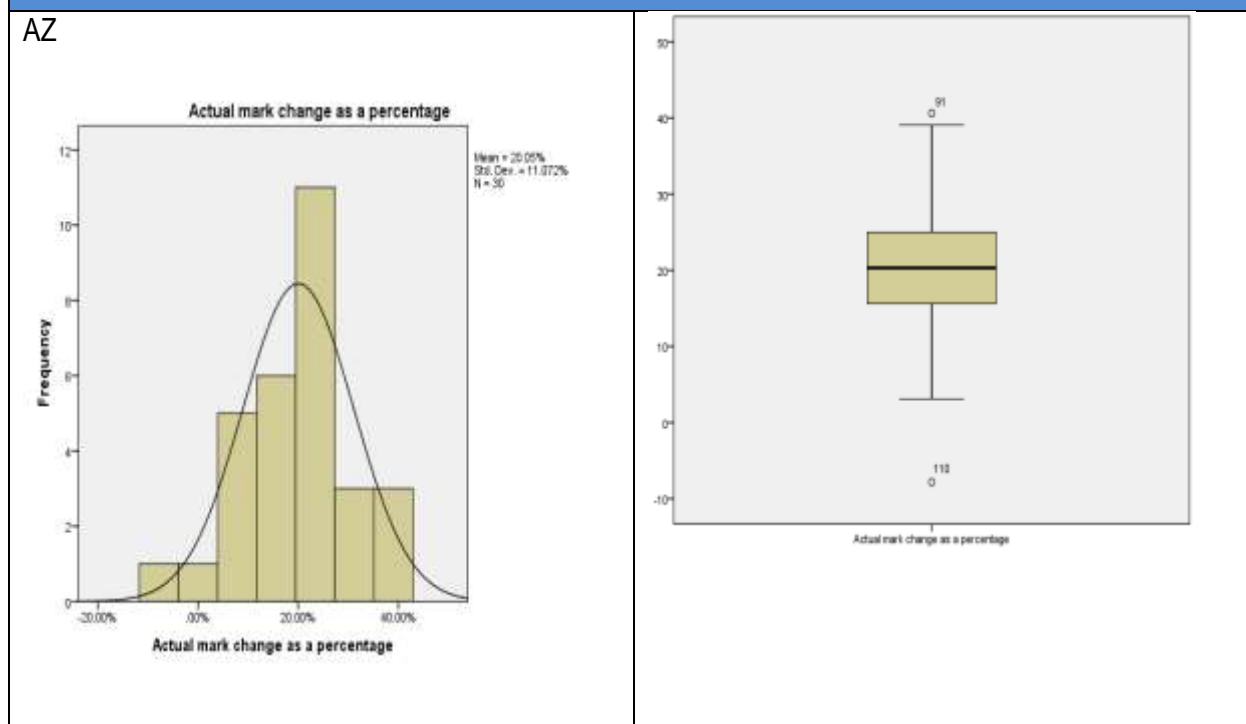
The data is normally distributed. The Shapiro-Wilk test for normality gave a p-value = 0.500 indicating that the data was normally distributed.

An error bar was constructed to determine whether the confidence intervals for the mean overlap. The information is shown in Figure 4.13.

Figure 4.13: Mean difference 95% confidence interval

error bars for the civil engineering department participants
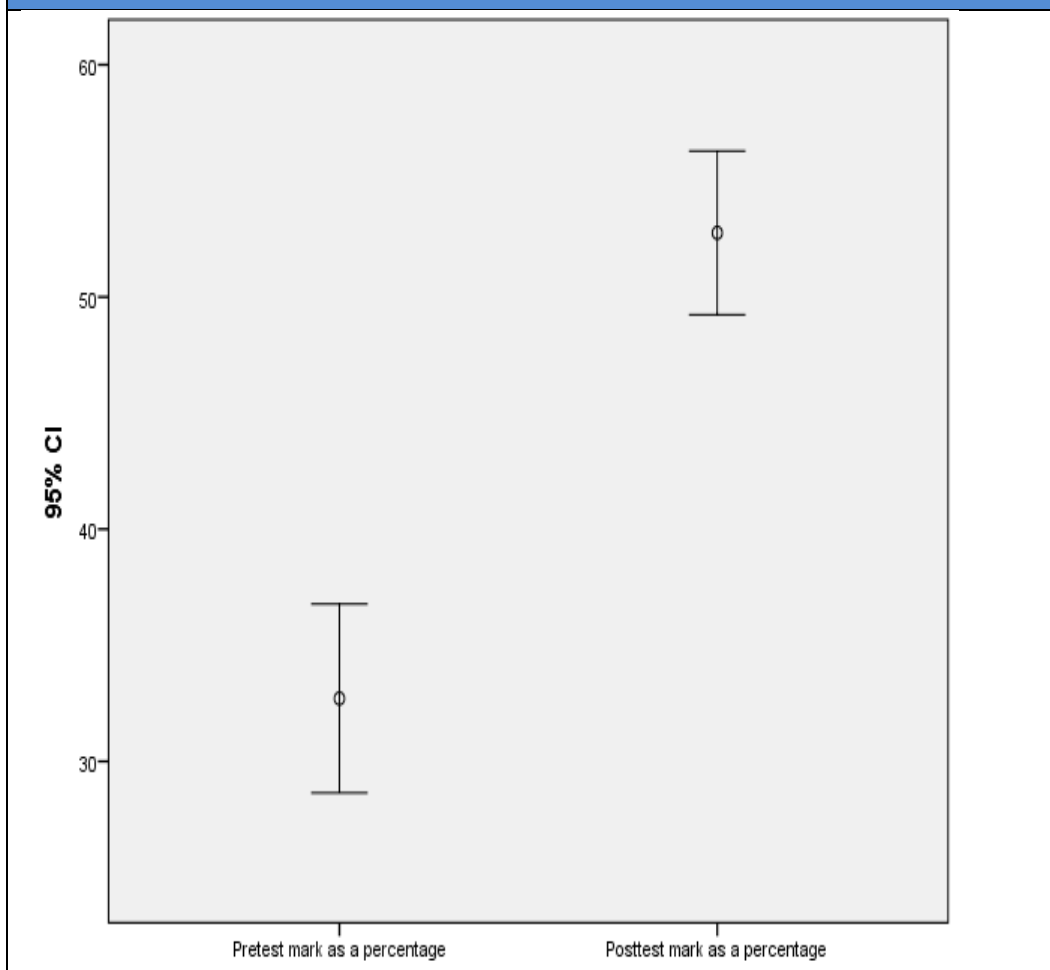
The confidence intervals do not overlap. At 95% confidence interval, one can conclude from the intervals that the mean score of pre-test is significantly lower than the post test. This mean that the intervention had an impact on the performance of the participants as can be seen from the 95% confidence interval of the means which do not overlap.

Since data was normally distributed, the paired t-test was used to test the hypothesis whether the means are the same. The hypothesis was:

$$H_o: \quad \mu_d = 0$$

$$H_1: \quad \mu_d \neq 0$$

The following output was obtained.

Table 4.13: Hypothesis testing – Paired samples t-test statistics for the civil engineering department participants

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest mark as a percentage	52.7604%	30	9.44374%	1.72418%
	Pretest mark as a percentage	32.7083%	30	10.87910%	1.98624%

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Posttest mark as a percentage & Pretest mark as a percentage	30	.413	.023

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Posttest mark as a percentage - Pretest mark as a percentage	20.05208%	11.07201%	2.02146%	15.91773%	24.18644%	9.920	29	.000

The mean difference post-test – pre-test) was 20.05. The standard deviation (SD) of the difference was 11.07.

The hypothesis gave a **t-value = 9.92** with a **p-value = 0.000**. Since the p-value is less than 0.05. Because of this, we can conclude that there is a statistically significant difference between the means of pre-test and post-test. Since the paired samples statistics revealed that the mean for the post test was greater than the mean for the pre-test, we can conclude there was a change in the pre- and post-test

scores, and there is a statistically significant/difference between the means of the pre-test and post-test scores; thus, the null hypothesis of equal means was rejected. The 95% confidence interval for the mean difference μ_d was 15.92 to 24.19 which does not include zero signifying mean differences. The above results from the quantitative pre-experimental design indicated an improved performance of participants from the pre- to the post-test scores.

4.4 ITEM SPECIFICATION AND ITEM BREAKDOWN (PRE-TEST AND POST-TEST)

This study utilised the SATAP English Test as its experimental instrument. SATAP is a standardised test and therefore it may not be displayed because of its nature. Nevertheless, the English aspects that have been tested may be discussed and analysed. The researcher envisages that the results of this study will inform the CLTD at WSU about the value and effectiveness of the intervention programmes, thus providing guidelines on how they might be improved and how faculties might be advised in this regard. The SATAP English Test comprised sixty four questions. The aspects tested are ten in total. The table below depicts the aspects tested and the number of questions asked per aspect.

Table 4.14: SATAP language aspects that are tested and number of questions per aspect.

English language aspects testes	No .of questions	Questions
Metaphorical Expression	9	1,32,33,36,40,43,46
Extrapolation, application and inferencing	9	4,7,18,19,31,34,37,3
Separating the essential and the non-essential	14	10,15,20,25,26,35,5 53,54,55,56,57
Understanding relations between parts of a text by recogn in discourse	5	6,9,11,17,28
Understanding relations between parts of text by recogn of cohesion	8	5,8,12,14,22,30,39,4
Understanding basic numerical concepts and/or informat text	1	27
Understanding the communicative function of sentences	4	2,3,21,24,
Understanding text genre (including audience, purpose, re	3	41,44,49
Vocabulary	4	13,16,23,29
Understanding information presented visually	7	58,59,60,61,62,63,6
Total	64	

An analysis was done to determine English language aspects of the SATAP English

test which improved dramatically after the Academic Literacy intervention programme.

Table 4.15 shows the means of the pre-test and post-test of the aspects.

Table 4.15: SATAP language aspects that are tested and number of questions per aspects with

the

pre-test, post-test and the mean difference.

Language Aspect	No. of questions	Pre-test	Post-test	Di= mean difference
Metaphorical Expression	9	31.33	43.33	12.00
Extrapolation, application and inferencing	9	32.00	41.67	9.67
Separating the essential and the non-essential	14	26.92	38.21	11.29
Understanding relations between parts of a text by recognising indicators in discourse	5	26.40	37.80	11.40
Understanding relations between parts of text by recognising indicators of cohesion	8	29.38	41.50	12.13
Understanding basic numerical concepts and/or information used in the text	1	21.00	38.00	17.00
Understanding the communicative function of sentences	4	35.50	42.50	7.00
Understanding text genre (including audience, purpose, register....)	3	26.33	40.67	14.33
Vocabulary	4	24.25	37.50	13.25
Understanding information presented Visually	7	30.29	43.57	13.29
Total	64	29.14	40.7212.0	11.58

The aspect on *understanding relations between parts of text by recognising indicators*

of cohesion had the highest mean change difference of 17.00   whilst the aspect on *understanding the communicative function of sentences* had the lowest mean change difference of 7.00.

Figure 4.14: Illustration of the language aspect from pre-test and post-test
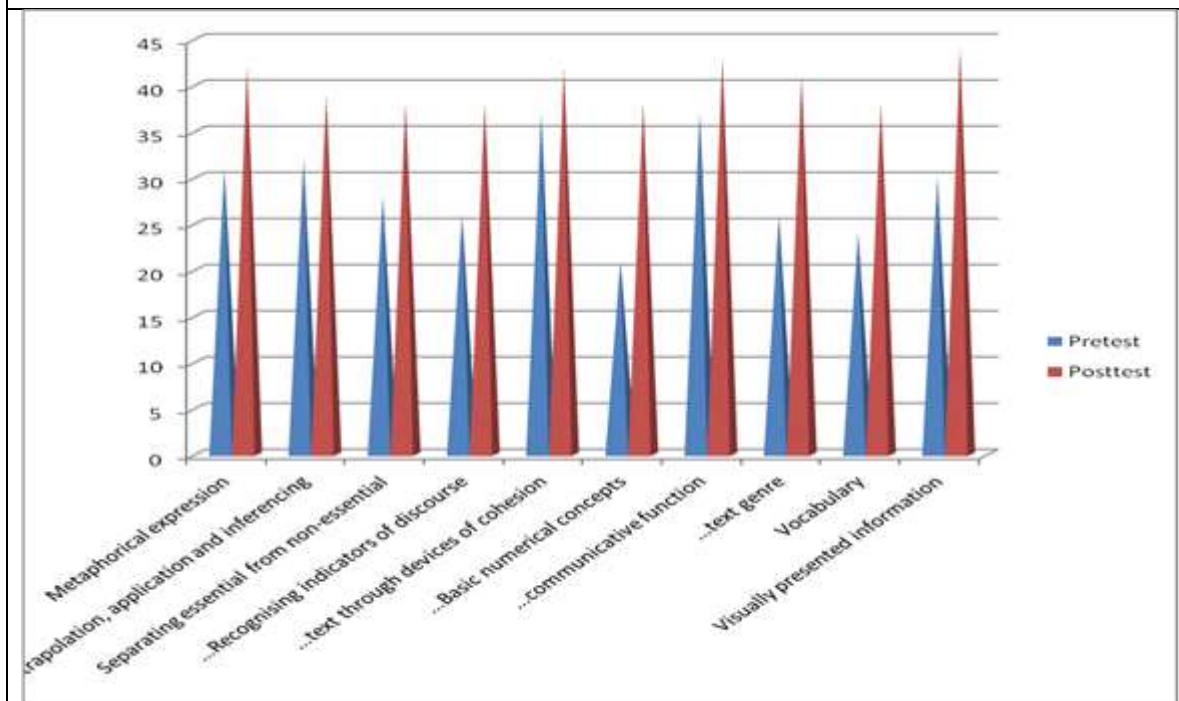
The post-test scores were higher in all aspects. The histogram and box plot of the differences are given in Figure 4.14.

Figure 4.15: Histogram and box plot showing distribution of mean difference for the aspects
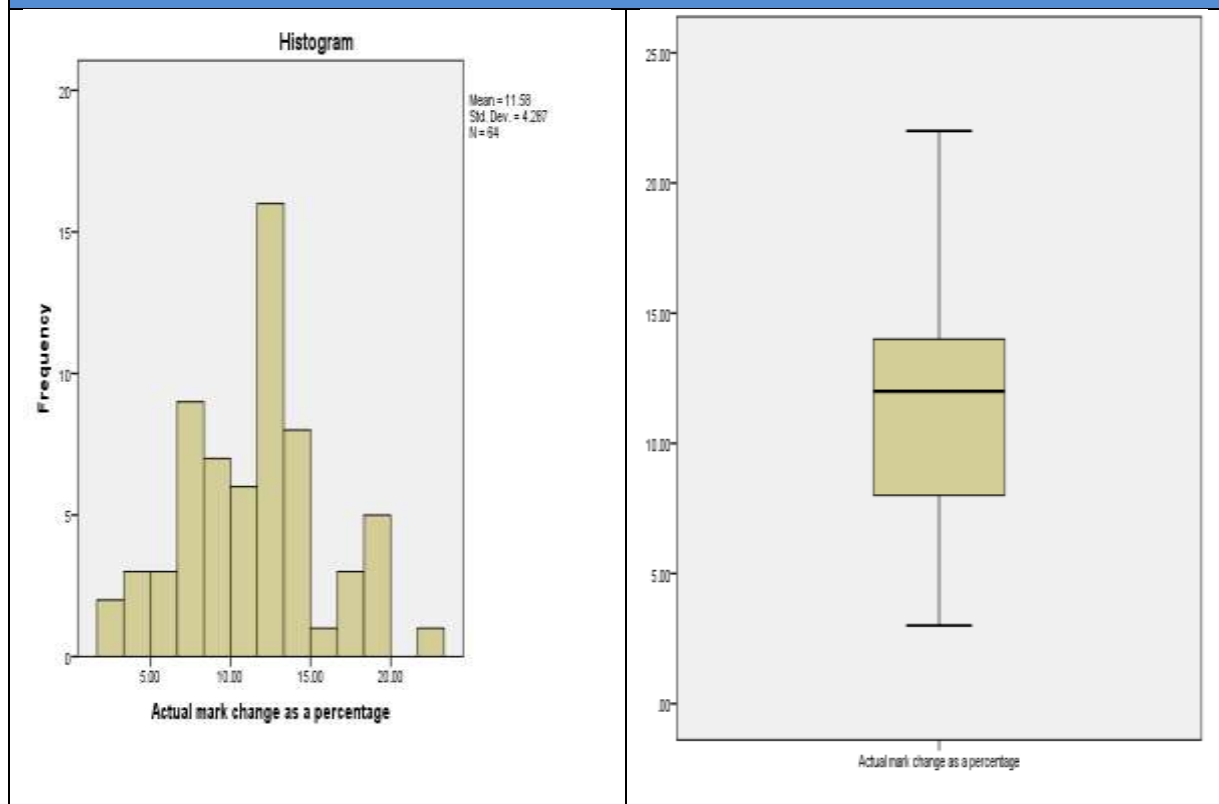
The data is normally distributed. The Shapiro-Wilk test for normality gave a p-value = 0.459 indicating that the data was normally distributed.

An error bar was constructed to determine whether the confidence intervals for the mean overlap. The information is shown in Figure 4.15.

Figure 4.16: Mean difference 95% confidence interval

error bars for the aspects
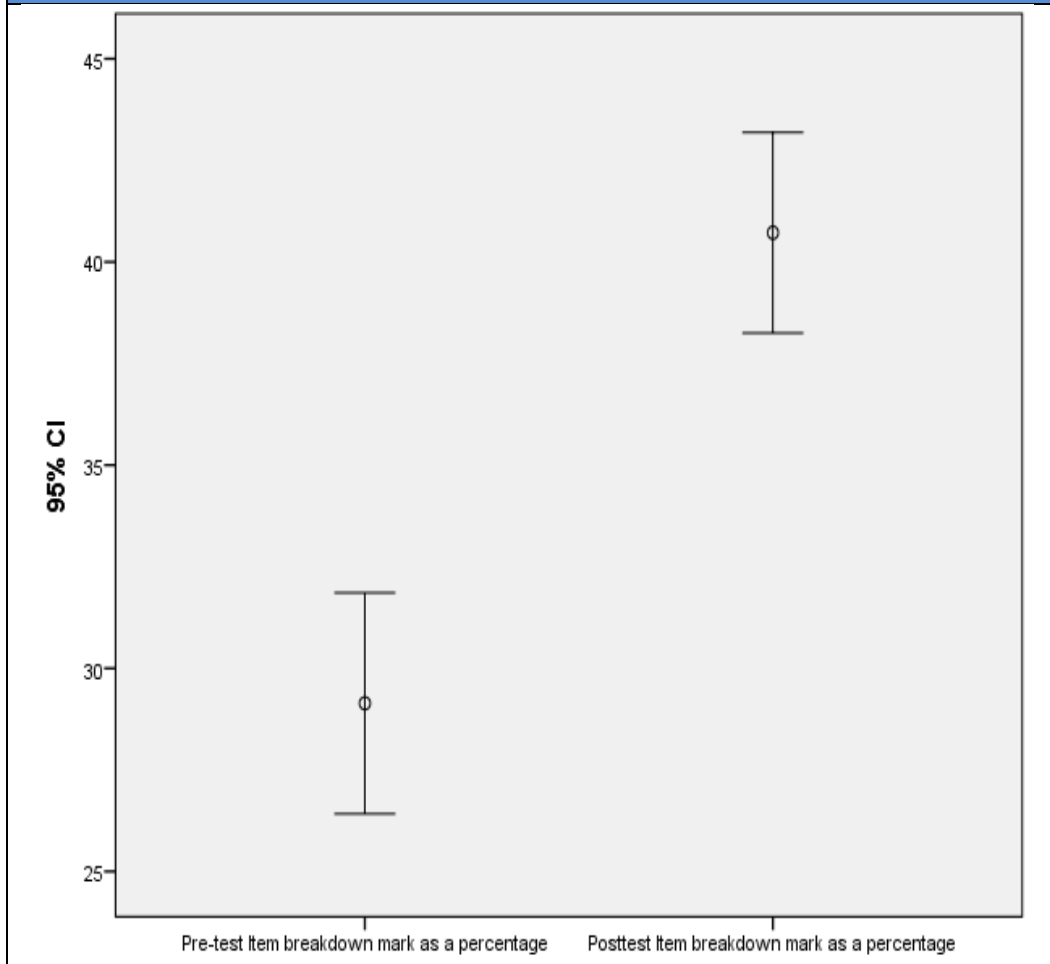
The confidence intervals do not overlap. At 95% confidence interval, one can conclude from the intervals that the mean score of pre-test is significantly lower than the post test. This mean that the intervention had an impact on the performance of the participants with respect to the aspects as can be seen from the 95% confidence interval of the means which do not overlap.

Since data was normally distributed, the paired t-test was used to test the hypothesis whether the means are the same. The hypothesis was:

$$H_o: \quad \mu_d = 0$$

$$H_1: \quad \mu_d \neq 0$$

The following output was obtained.

Table 4.16: Hypothesis testing – Paired samples t-test statistics for the difference in performance of the aspects

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest Item breakdown mark as a percentage	40.7188%	64	9.88581%	1.23573%
	Pre-test Item breakdown mark as a percentage	29.1406%	64	10.88886%	1.36111%

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Posttest Item breakdown mark as a percentage & Pre-test Item breakdown mark as a percentage	64	.919	.000

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Posttest Item breakdown mark as a percentage - Pre-test Item breakdown mark as a percentage	11.57813%	4.28658%	0.53582%	10.50737%	12.64888%	21.608	63	.000

The mean difference post-test – pre-test) was 11.58. The standard deviation (SD) of the difference was 4.29.

The hypothesis gave a **t-value = 21.609** with a **p-value = 0.000**. Since the p-value is less than 0.05. Because of this, we can conclude that there is a statistically significant difference between the means of pre-test and post-test for the aspects. Since the paired samples statistics revealed that the mean for the post test was greater than the mean for the pre-test, we can conclude there was a change in the pre- and post-test scores, and there is a statistically significant/difference between the means of the pre-test and post-test scores; thus, the null hypothesis of equal means was rejected for the aspects. The 95%

confidence interval for the mean difference μ_d was 10.51 to 1.65 which does not include zero signifying mean differences. The above results from the quantitative pre-experimental design indicated an improved performance of participants from the pre- to the post-test scores in terms of the aspects.

4.5   ANALYSIS OF RESULTS AND DISCUSSIONS

The effect of the Academic literacy intervention programme on the SATAP English test scores of all the participants is analysed. The marks obtained by the students' pre-test and post-test were taken and compared for analysis.

Tables and Figures served as visual presentation of the scores obtained for the pre and post-tests as well as the percentage increases that occurred when the pre and post-tests marks were compared. According to Table 4.4and Figure 4.5, all participants received a mark increase between their pre and post-tests varied from -7.81% to a maximum of 54.69%. Some students' marks increased dramatically, especially those who obtained low marks in their pre-tests. The improvement in the post-tests may have been impacted by multiple variables because the students participated in numerous intervention programmes that occurred simultaneously during the year.

With hundreds of variables having an impact on students' performance, the likelihood that one intervention is responsible for the result is unlikely. For instance, these students have been exposed in an English environment for about ten months by the time they write the post-tests. This environment is likely to contribute to their basic interpersonal communications. These students had also had much more experience in university tests by the time they wrote the post-tests. There was likely to be less stress, because the pre-tests were written in the first stressful week at university. Nonetheless, whether this change would have occurred without the application of the treatment or is an independent variable cannot be claimed categorically. It could also be that the mere maturation by the participants caused the change. Some students' marks increased only slightly, especially those that had a high mark in the

pre-tests. It is further notable that the scores for the pre-tests varied much more than those for the post-tests. This does indicate that intervention programmes do have an effect on students' performance. These results serve as supplementary evidence for the argument of various researchers in the field of academic support that, academic intervention support does have an impact on student learning.

The results obtained in this study do highlight the urgent need for student support, especially for first year students at university. A number of meta-analyses have sought to determine the overall influence of intervention and support programmes on student outcomes. Collectively, literature suggest that effective studying requires not only that the student possess knowledge of appropriately studying techniques and practices, but also sustained and deliberate effort, self- regulation, ability to concentrate and a sense of responsibility for , and value in one's own learning. Literature also suggests that academic learning centres are vital in creating conducive learning environment, thus institutions should ensure contemporary academic learning centres that offer intervention and support programmes Aquino (2011:1116)

Finally future research is needed to further investigate how learning environment that integrates the proposed framework for confluent academic interventions affects students' learning behaviour and enhances students' education development. It is noted that the findings of this study are derived from a single cohort of students from the same institution, thus the extent to which results are generalizable to other content areas, therefore it furthers future investigation.

4.6   SUMMARY

This chapter dealt with the presentation and analysis of the results obtained from the study. It can be concluded that the study yielded positive results. The findings lead to the acceptance of both alternative hypotheses, which indicated a change in the pre- and post-test scores. The data analysis in this chapter indicates that the intervention of Academic Literacy was effective in improving the SATAP scores of first year Engineering students. Only 2 participants did not improve their scores. However, a comparison with a control group would have reinforced this finding. It is hoped that this research will assist the Academic Literacy section in aligning their support programme curriculum to be responsive to the students' language learning needs.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

According to Welman and Kruger (2002), a chapter on findings, conclusions and recommendations should not merely repeat the results in the preceding section, but explain their meaning and implications in the light of the purpose for which the research was undertaken. The purpose of this chapter is, therefore, to summarise and draw conclusions regarding the elemental findings of this study. This chapter also provides suggestions on how individuals can be guided to develop their academic literacy skills as well as some suggestions on possible directions for further research in this field and other related areas. The focus of this study was to evaluate the effect of the academic literacy intervention programme on the SATAP English scores of first year FSET students. The problem of inadequate academic literacy skills and the inhibiting effect it has on student performance were described and contextualised in Chapter 1. Chapter 2 was devoted to a literature study on the theoretical foundation of the study. Literature on the context of higher education students and academic literacy intervention provided the researcher with knowledge about the research topic. In Chapter 3 the research methodology that guided the data collection was described. Findings were derived from a quantitative pre- and post-experimental design and analysed in Chapter 4. The summary of the findings and conclusions are presented in the final chapter. Chapter 5 further makes recommendations and offers suggestions for further research.

5.2 SUMMARY

The research was conducted within a theoretical and contextual framework which was constructed on the emancipatory framework, containing various intertwined approaches and theories. This theoretical framework served as a guide which oriented the research study process. This research study used a quantitative pre-experimental design to collect and analyse data. According to the data collected and analysed, all students' marks (with the exception of a few), increased in the post-test, which indicated a positive effect of the intervention on the academic literacy skills and academic performance in the SATAP English paper. The fact that students under study have passed the course increases their chances of gaining access to higher educational institutions, and the fact that they have improved their

English Literacy skills increases their chances of succeeding at tertiary level". Chapter 5 therefore serves as an explanation of the findings derived and offered in Chapter 4. Reference was made to the research context, research question, research aim, and method and research design. The research aims were fulfilled by the conclusions drawn from the findings of this study. A discussion of the recommendations and limitations of the study were also presented in the final chapter.

5.2.1 Fulfilling the aim of the study

The aim of the study was to evaluate the effect of the academic literacy intervention programme on SATAP English scores of FSET first year students at the WSU who have the option of the extended programme. Firstly, entry level students in the departments under study were subjected to a SATAP test, which sought to identify the gaps in their English language skills. These weaknesses may have been the result of their previous schooling provision. After the weaknesses were identified were identified, the SATAP report was submitted to Academic Literacy lecturers, who focused their teaching on the aspects identified in the test. A post-test was subsequently written after a year of instruction in Academic Literacy as an intervention programme. Their academic performance on the SATAP test was evaluated by collecting, comparing and analysing the students' test marks form before and after the intervention. The pre- intervention test, therefore, identified the areas on which the curriculum planners and designers needed to place greater emphasis during intervention. The aim of the study was achieved and it was evident that the academic literacy intervention programme did increase the students' SATAP English scores. In Chapter 1 the research questions were identified as follows:

- Does the Academic Literacy intervention programme improve the STAP English scores of first-year students in the FSET?

- Was there an improvement in the SATAP scores after they were exposed to Academic Literacy as an intervention programme?

- Have the skills gaps identified in the pre-test been improved in the post-test?

5.3 SYNTHESIS OF RESEARCH FINDINGS

The synthesis of research findings provides a balance between the empirical findings and the literature reviewed. Findings are highlighted before a conclusion is reached. The synthesis of research findings is based on the main research questions:

- Does the academic literacy intervention programme improve the scores of the SATAP English test of first year students in the FSET?

This will be followed by the sub-questions:

- Was there an improvement in the SATAP scores after they were exposed to the Academic Literacy as an intervention programme?

- Have the skills gaps identified in the pre-test been improved in the post-test?

The main research question formed the basis of the entire study, because an increase on the SATAP scores after the intervention could mean that the language proficiency of the entire students has also drastically improved as is shown in the mark increase. The mark increase may minimise the risk of academic failure in these students; thus, providing them with a life-long opportunity to become academically literate. It may also impact positively on the throughput and retention rates of the institution.

5.4 CONCLUSIONS

This study was based on the main research question which was: Does the academic literacy intervention programme have an effect on the SATAP scores of first –year students in the Faculty of Science Engineering and Technology? Conclusions are drawn from the findings and discussed below. The study was conducted in such a manner that its outcomes would assisted in addressing the following research sub- questions:

- Was there an increase in the SATAP scores after the academic literacy intervention programme was offered to first-year students in the FSET?
- Were the skills gaps identified in the pre-test improved in the post-tests after intervention?

What follows are the responses to these sub-questions.

5.4.1

Was there an increase in the SATAP scores after academic literacy intervention programme was offered to first-year students in the FSET?

The main purpose of the study was to evaluate the effect of the Academic Literacy intervention programme on the SATAP English scores of first-year students in the FSET. The sub-question, therefore, was whether there had been an increase in the students' scores. The immediate response was yes, the intervention had a significant effect on the scores, which is evident in Appendix: C, Table 4.5 and Figure: 4.5. The data gathered showed that the intervention programme was effective in terms of improved scores and the percentages of each student. Although the study evaluated the Academic Literacy intervention programme only, the possibility that the possibility that other factors may have contributed to the increase in the marks of the students cannot be ruled out.

5.4.2

Have the skills gap identified in the pre-test been improved in the post-tests after the intervention?

Weideman (2006: vi, in the preamble to his book, states that language proficiency is an important predictor of learner success, albeit not the only one. This sub-question requires the study to show clearly whether the skills gaps that were identified from the pre-intervention tests (the findings in Chapter 4,Table: Figure:) have improved in the post-tests. This intervention may provide students in the programme with an early opportunity to develop their academic language proficiency. The intervention programme may further provide students with an opportunity to become academically literate. The value of such support programmes is that they minimise the risk of academic failure.

5.5 LIMITATIONS AND SHORTCOMINGS OF THE RESEARCH

In the process of analysing the data that were collected more than once, several limitations of the study became evident. These limitations constantly considered in this research. A primary limitation of the study was the very nature of the study itself. The sample selected for this study was from one of the four campuses of the Walter Sisulu University. The population consisted of students in the Extended Programme who are exposed to the CLTD's intervention programmes. There were 30 students each from the four Departments that participated in the study. Some students changed Departments during the study and decided to discontinue their decided to discontinue their participation in the tests. The researcher had to pursue them and persuade them to participate in the post-testing phase. Even though these limitations placed constraints onto this research study, the findings still constitute a valuable input to the applicable field of research.

5.6 RECOMMENDATIONS

This final section makes recommendations based on the findings of the research project and the answers to the research questions which were provided in Chapter 1. Rather than offering academic literacy academic literacy only to students in the Extended Programme, Mainstream lecturers also need to build or infuse academic literacy skills into their offerings and be prepared to scaffold student participation in these programmes.

The improvement in scores indicates that all students at entry level need to be exposed to tests that will identify their strengths and weaknesses, and assess their academic preparedness, so that the support that is provided for them is tailored to their generic language needs. It is further recommended that all the intervention programmes offered by the CLTD be marketed extensively in all faculties and means to make them easily accessible be devised. It is also recommended that an Academic Literacy policy be instituted where all incoming students will be tested for Academic Literacy skills.

Peer Assisted Learning (PAL) sessions could also be used in a constructivist way through peer support and group work. If needs be, the support could also be provided beyond first year and to mainstream students as well as a university-wide programme. Management and lecturers could also be persuaded of the need for more slots in the time-table for this programme, as Nassimbeni and De Jager (2002:)

found academics' attitudes to be one of the biggest challenges in the provision of new ventures in universities.

It is further recommended that a holistic integrated approach (an asset or developmental approach as opposed to a deficit approach) currently used by the WSU, be followed by integrating academic support in high risk courses and also in the mainstream curricula route, to the benefit of prepared students. It is finally recommended that the current name for this course be intensively discussed and decided upon, as Academic Literacy is a very broad concept which is more pluralistic in nature, having a number of sub-literacies. This can be misleading and confusing when a singular literacy is named.

5.6.1 Advocacy

Advocacy according to the Alliance for Justice (2008: 1) is the act of pleading for or supporting a cause whose main objective is to sensitise, with a view to influencing decisions. Faculties have to buy into these intervention programmes and collaboration between faculties and the CLTD should be encouraged to avoid challenges such as time frames and difficulty in getting class periods for intervention practitioners. Academics and students need to be educated in the importance of these programmes to the entire institution. The CLTD should collaborate with Faculties to enhance students' language skills for students to ensure that they are adequately equipped with language skills that will prepare them for the rigors of university study. It is important to market the Academic Literacy intervention programme broadly to the WSU community. Academic Literacy should be considered an essential part of improving throughputs especially in the pass rate of first year students, and the process of academic monitoring of all first years should be emphasised. A more efficient use of the academic support programmes which should be viewed positively by both staff and students coupled with better teaching and learning skills may produce further improvement. Professional development for lecturers is also a crucial ingredient in improving reading outcomes and preventing reading difficulties. Lecturers' teaching skills should also be strengthened and lecturers' knowledge of the reading process increased. The integration of newer research on reading should be incorporated into their teaching practices (Snow: 2008).

5.7 SUGGESTIONS FOR FURTHER RESEARCH

The researcher recommends continuous research in the field of Academic Literacy in order to keep abreast with new developments and also to keep pace with the most recent definitions and approaches. Kern (2000:23) notes that "Literacy is an elastic concept; its meaning varies according to the disciplinary lens through which one examines it". Any two people will thus seldom hold the same conceptual framework of the term. It therefore needs to be continually revisited. A longitudinal study could again be conducted to determine what value academic literacy skills have on the students' academic success, institutional throughput and retention rate. This study could also be done on two groups, those in the extended programme and those in the mainstream programme as a control group would provide more valid results for the enquiry.

In conclusion, it was evident from the various analyses that students significantly improved their academic literacy skills performance in the tests. This was noticeable in the increase in marks in the post-test scores after the intervention. This identifies Academic Literacy as a beneficial and a worthwhile programme.

5.8 CONCLUSION

The field of study encompassing academic literacy is constantly evolving and, consequently, difficult to pin down. Improved academic literacy interventions should therefore be designed and adapted to suit the changing student body and also the changing environments. The curriculum should also be re-aligned to suit different emerging situations. That the students improved their English language skills, which is confirmed by the quantitative results of improved SATAP scores points to the fact that Academic Literacy is beneficial and worthwhile. Students who have completed the Academic Literacy course now have several options open to them. The fact that they have gone through the programme increases their chances of gaining access to a number of academic institutions and having improved their English literacy skills increases their chances of succeeding at the tertiary level. The programme serves to bridge the divide between students' scholastic deprivation and access to higher education.

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APPENDIX A –Pre-test scores

Student No.	Marks obtained	Percentage obtained%
Building (Construction Management & Quantity Surveying)		
Student 1	21	33%
Student 2	27	27%
Student 3	24	38%
Student 4	12	19%
Student 5	28	44%
Student 6	31	49%
Student 7	19	30%
Student 8	12	19%
Student 9	15	24%
Student 10	25	39%
Student 11	27	42%
Student 12	21	33%
Student 13	18	28%
Student 14	14	22%
Student 15	24	38%
Student 16	33	52%
Student 17	16	25%
Student 18	20	31%
Student 19	13	20%
Student 20	19	30%
Student 21	29	45%
Student 22	34	53%
Student 23	14	22%
Student 24	27	42%

Student 25	30	47%
Student 26	21	33%
Student 27	15	24%
Student 28	20	31%
Student 29	24	38%
Student 30	26	41%
Electrical Engineering		
Student 1	20	31%
Student 2	19	30%
Student 3	31	49%
Student 4	14	24%
Student 5	19	30%
Student 6	27	42%
Student 7	16	25%
Student 8	13	20%
Student 9	15	24%
Student 10	28	44%
Student 11	24	38%
Student 12	12	19%
Student 13	17	27%
Student 14	16	25%
Student15	19	30%
Student 16	21	33%
Student 17	12	19%
Student 18	25	39%
Student 19	18	28%
Student 20	16	25%
Student 21	35	55%
Student 22	31	49%
Student 23	16	25%
Student 24	27	42%

Student 25	21	33%
Student 26	14	22%
Student 27	26	41%
Student 28	14	22%
Student 29	24	38%
Student 30	21	33%
Student 1	17	27%
Student 2	12	19%
Student 3	15	24%
Student 4	25	39%
Student 5	31	49%
Student 6	12	19%
Student 7	19	30%
Student 8	21	33%
Student 9	19	30%
Student 10	15	24%
Student 11	12	19%
Student 12	31	49%
Student 13	27	42%
Student 14	16	25%
Student 15	13	20%
Student 16	19	30%
Student 17	31	49%
Student 18	17	27%
Student 19	21	33%
Student 20	31	49%
Student 21	12	19%
Student 22	24	38%
Student 23	33	52%
Student 24	19	30%
Student 25	15	24%
Student 26	34	53%

Student 27	30	47%
Student 28	26	41%
Student 29	19	30%
Student 30	11	17%
	Civil Engineering	
Student 1	15	24%
Student 2	21	33%
Student 3	17	27%
Student 4	28	44%
Student 5	12	19%
Student 6	25	39%
Student 7	18	28%
Student 8	14	22%
Student 9	33	52%
Student 10	20	31%
Student 11	21	33%
Student 12	19	30%
Student 13	24	38%
Student 14	16	25%
Student 15	31	49%
Student 16	19	30%
Student 17	27	42%
Student 18	17	27%
Student 19	32	50%
Student 20	30	47%
Student 21	16	25%
Student 22	35	55%
Student 23	13	20%
Student 24	15	24%
Student 25	12	19%

Student 26	28	44%
Student 27	11	17%
Student 28	14	22%
Student 29	24	38%
Student 30	21	33%

APPENDIX B - Posttest scores

Student No.	Marks obtained	Percentage obtained%
Building (Construction Management & Quantity Surveying)		
Student 1	**44**	**69%**
Student 2	**42**	**66%**
Student 3	**42**	**66%**
Student 4	**36**	**56%**
Student 5	**43**	**67%**
Student 6	**44**	**69%**
Student 7	**47**	**73%**
Student 8	**28**	**44%**
Student 9	**30**	**49%**
Student 10	**41**	**64%**
Student 11	**41**	**64%**
Student 12	**38**	**59%**
Student 13	**44**	**69%**
Student 14	**42**	**66%**
Student 15	**44**	**69%**
Student 16	**31**	**48%**
Student 17	**34**	**53%**
Student 18	**44**	**69%**
Student 19	**38**	**59%**
Student 20	**54**	**84%**
Student 21	**48**	**75%**
Student 22	**44**	**69%**
Student 23	**38**	**59%**
Student 24	**45**	**70%**
Student 25	**43**	**67%**
Student 26	**40**	**66%**

Student 27	42	63%
Student 28	46	72%
Student 29	48	75%
Student 30	44	69%
Electrical Engineering		
Student 1	45	70%
Student 2	42	63%
Student 3	45	70%
Student 4	36	56%
Student 5	40	66%
Student 6	48	75%
Student 7	39	61%
Student 8	31	48%
Student 9	30	49%
Student 10	39	61%
Student 11	47	73%
Student 12	28	44%
Student 13	39	61%
Student 14	33	52%
Student15	37	58%
Student 16	42	63%
Student 17	25	39%
Student 18	37	58%
Student 19	32	50%
Student 20	31	48%
Student 21	45	70%
Student 22	41	64%
Student 23	35	55%
Student 24	47	73%
Student 25	40	66%
Student 26	26	41%

Student 27	**42**	**63%**
Student 28	**33**	**52%**
Student 29	**46**	**72%**
Student 30	**38**	**59%**
	Mechanical Engineering	
Student 1	**57**	**89%**
Student 2	**52**	**81%**
Student 3	**43**	**67%**
Student 4	**58**	**91%**
Student 5	**52**	**81%**
Student 6	**42**	**67%**
Student 7	**51**	**80%**
Student 8	**48**	**75%**
Student 9	**52**	**81%**
Student 10	**46**	**72%**
Student 11	**48**	**75%**
Student 12	**52**	**81%**
Student 13	**51**	**80%**
Student 14	**50**	**78%**
Student 15	**49**	**77%**
Student 16	**46**	**72%**
Student 17	**48**	**75%**
Student 18	**44**	**69%**
Student 19	**51**	**80%**
Student 20	**50**	**78%**
Student 21	**52**	**81%**
Student 22	**49**	**77%**
Student 23	**42**	**63%**
Student 24	**47**	**73%**
Student 25	**45**	**70%**
Student 26	**48**	**75%**

Student 27	51	80%
Student 28	50	78%
Student 29	45	70%
Student 30	57	89%
	Civil Engineering	
Student 1	41	64%
Student 2	34	53%
Student 3	35	55%
Student 4	31	49%
Student 5	37	58%
Student 6	41	64%
Student 7	44	69%
Student 8	40	63%
Student 9	38	59%
Student 10	35	55%
Student 11	34	53%
Student 12	60	94%
Student 13	28	44%
Student 14	35	55%
Student 15	36	56%
Student 16	31	49%
Student 17	32	50%
Student 18	42	63%
Student 19	44	69%
Student 20	25	39%
Student 21	59	92%
Student 22	37	58%
Student 23	33	52%
Student 24	25	39%

Student 25	32	50%
Student 26	35	55%
Student 27	37	58%
Student 28	30	49%
Student 29	35	55%
Student 30	42	63%

APPENDIX C- Pretest, Prosttest scores, Mark change and Mark change Percentage

Student No.	Pretest mark	Posttest mark	Mark change	% change
Building (Construction Management & Quantity Surveying)				
Student 1	21	44	23	35.9
Student 2	27	42	15	23.4
Student 3	24	42	18	28.1
Student 4	12	36	24	37.5
Student 5	28	43	15	23.4
Student 6	31	44	13	20.3
Student 7	19	27	8	
Student 8	12	28	16	25
Student 9	15	30	15	23.2
Student 10	25	41	16	25
Student 11	27	41	14	21.8
Student 12	21	38	17	26.5
Student 13	18	44	26	40.6
Student 14	14	42	28	43.7
Student 15	24	44	20	31.2
Student 16	33	31	-2	-3.1
Student 17	16	34	18	28.1
Student 18	20	44	24	37.5
Student 19	13	38	25	39
Student 20	19	54	35	54.6
Student 21	29	48	19	29.6
Student 22	34	44	10	15.6
Student 23	14	38	24	37.5
Student 24	27	45	18	28.1
Student 25	30	43	13	20.3
Student 26	21	40	19	29.6
Student 27	15	42	27	42.1

Student 28	20	46	26	40.6
Student 29	24	48	24	37.5
Student 30	26	44	18	28.1
Electrical Engineering				
Student 1	20	45	25	39
Student 2	19	42	23	35.9
Student 3	31	45	14	21.8
Student 4	14	36	22	34.3
Student 5	19	40	21	32.8
Student 6	27	48	21	32.8
Student 7	16	39	23	35.9
Student 8	13	31	18	28.2
Student 9	15	30	15	23.4
Student 10	28	39	11	17.1
Student 11	24	47	23	35.9
Student 12	12	28	16	25
Student 13	17	39	22	34.2
Student 14	16	33	17	26.6
Student15	19	37	18	28.2
Student 16	21	42	21	32.8
Student 17	12	25	13	20.3
Student 18	25	37	12	18.7
Student 19	18	32	14	21.8
Student 20	16	31	15	23.4
Student 21	35	45	10	15.6
Student 22	31	41	10	15.6
Student 23	16	35	19	29.6
Student 24	27	47	20	31.2
Student 25	21	40	19	29.6
Student 26	14	26	12	18.7
Student 27	26	42	16	25

Student 28	**14**	**33**	**19**	**29.6**
Student 29	**24**	**46**	**22**	**34.2**
Student 30	**21**	**38**	**17**	**26.6**
	Mechanical Engineering			
Student 1	17	**37**	**20**	**31.2**
Student 2	12	**32**	**20**	**31.2**
Student 3	15	**33**	**18**	**28**
Student 4	25	**48**	**23**	**35.9**
Student 5	31	**52**	**21**	**32.8**
Student 6	12	**32**	**20**	**31.2**
Student 7	19	**31**	**12**	**18,7**
Student 8	21	**38**	**17**	**26.5**
Student 9	19	**32**	**13**	**20.3**
Student 10	15	**26**	**11**	**17.1**
Student 11	12	**28**	**16**	**25**
Student 12	31	**52**	**21**	**32.8**
Student 13	27	**51**	**24**	**37**
Student 14	16	**30**	**14**	**21.8**
Student 15	13	**29**	**16**	**25**
Student 16	19	**36**	**17**	**26.5**
Student 17	31	**48**	**17**	**26.5**
Student 18	17	**34**	**17**	**26.5**
Student 19	21	**31**	**10**	**15.6**
Student 20	31	**40**	**11**	**17.1**
Student 21	12	**22**	**10**	**15.6**
Student 22	24	**49**	**25**	**39**
Student 23	33	**42**	**5**	**40.6**
Student 24	**19**	27	**8**	**12.5**
Student 25	**15**	25	**10**	**15.6**
Student 26	**34**	**48**	**14**	**21.8**

Student 27	30	41	11	17.1
Student 28	26	40	14	21.8
Student 29	19	35	16	25
Student 30	11	27	16	25
	Civil Engineering			
Student 1	15	41	26	40.6
Student 2	21	34	13	20.3
Student 3	17	35	18	28,1
Student 4	28	31	3	4.6
Student 5	12	37	25	39
Student 6	25	41	16	25
Student 7	18	34	26	40.6
Student 8	14	30	26	40.6
Student 9	33	48	5	7.8
Student 10	20	35	15	23.4
Student 11	21	34	13	20.3
Student 12	19	30	11	17.1
Student 13	24	28	4	18.4
Student 14	16	35	19	29.6
Student 15	31	36	5	7.8
Student 16	19	31	12	18.7
Student 17	27	32	5	7.8
Student 18	17	42	25	39
Student 19	32	44	12	18.7
Student 20	30	25	5	7.8
Student 21	16	29	13	20.3
Student 22	35	37	2	3.1
Student 23	13	23	10	15.6
Student 24	15	25	10	15.6
Student 25	12	27	15	23.4

Student 26	**28**	**35**	**7**	**10.9**
Student 27	**11**	**27**	**16**	**25**
Student 28	**14**	**30**	**16**	**25**
Student 29	**24**	**35**	**11**	**17.1**
Student 30	**21**	**42**	**21**	**32.8**

APPENDIX D- Item specification and item breakdown

Question	Item specification	Pre-test Item breakdown	Posttest Item Breakdown
1.	Metaphorical expression	37%	43%
2.	Communicative function of sentences	37%	45%
3.	Communicative function of sentences	30%	43%
4.	Extrapolation, application and inferencing	40%	46%
5.	Relations between parts of a text through devices of cohesion	39%	44%
6.	Relations between parts of a text through devices of cohesion	40%	48%
7.	Extrapolation, application and inferencing	34%	42%
8.	Relations between parts of a text through devices of cohesion	16%	23%
9.	Relations between parts of a text through devices of cohesion	38%	44%
10.	Essential and Non-Essential	44%	52%
11.	Relations between parts	13%	21%
12.	Relations between parts of text through devices of cohesion	14%	33%
13.	Vocabulary	30%	45%
14.	Understanding relations between parts of text by recognising indicators in discourse	35%	42%
15.	Separating the essential from the non-essential	31%	41%
16.	Vocabulary	10%	29%
17.	Understanding relations between parts of text by recognising indicators in discourse	21%	40%
18.	Extrapolation, application and inferencing	13%	28%

19.	*Extrapolation, application and inferencing*	*33%*	*42%*
20.	*Separating the essential from the non-essential*	*29%*	*40%*
21.	*Understanding the communicative function of sentences*	*36%*	*40%*
22.	*Understanding relations between parts of text through devices of cohesion*	*33%*	*41%*
23.	*Vocabulary*	*39%*	*46%*
24.	*Understanding the communicative function of sentences*	*39%*	*42%*
25.	*Separating the essential from the non-essential*	*19%*	*36%*
26.	*Separating the essential from the non-essential*	*31%*	*40%*
27.	*Understanding basic numerical concepts and/or information used in text*	*21%*	*38%*
28.	*Understanding relations between parts of text by recognizing indicators in discourse*	*20%*	*36%*
29.	*Vocabulary*	*18%*	*30%*
30.	*Understanding relations between parts of text by recognising indicators in discourse*	*25%*	*40%*
31.	*Extrapolation, application and inferencing*	*14%*	*26%*
32.	*Metaphorical expression*	*23%*	*37%*
33.	*Metaphorical expression*	*28%*	*40%*
34.	*Extrapolation, application and inferencing*	*39%*	*52%*
35.	*Separating the essential from the non-essential*	*33%*	*44%*
36.	*Metaphorical expression*	*48%*	*60%*
37.	*Extrapolation, application and inferencing*	*44%*	*54%*
38..	*Extrapolation, application and inferencing*	*29%*	*40%*
39.	*Understanding relations between parts of text through devices of cohesion*	*50%*	*64%*
40.	*Metaphorical expression*	*28%*	*41%*

41.	*Understanding text genre (including audience, purpose, register...)*	*21%*	*36%*
42.	*Understanding relations between parts of text through devices of cohesion*	*23%*	*45%*
43.	*Metaphorical expression*	*19%*	*30%*
44.	*Understanding text genre (including audience, purpose, register...)*	*35%*	*44%*
45.	*Extrapolation application and inferencing*	*42%*	*45%*
46.	*Metaphorical expression*	*38%*	*47%*
47.	*Metaphorical expression*	*36%*	*48%*
48.	*Metaphorical expression*	*25%*	*44%*
49.	*Understanding text genre (including audience, purpose, register...)*	*23%*	*42%*
50.	*Separating the essential from non-essential*	*14%*	*26%*
51.	*Separating the essential from the non-essential*	*9%*	*20%*
52.	*Separating the essential from the non-essential*	*12%*	*25%*
53.	*Separating the essential from non-essential*	*19%*	*32%*
54.	*Separating the essential from the non-essential*	*19%*	*24%*
55.	*Separating the essential from the non-essential*	*56%*	*69%*
56.	*Separating the essential from the non-essential*	*33%*	*46%*
57.	*Separating the essential from non-essential*	*28%*	*40%*
58.	*Understanding information presented visually*	*42%*	*54%*
59.	*Understanding information presented visually*	*46%*	*56%*

60.	*Understanding information presented visually*	*25%*	*40%*
61.	*Understanding information presented visually*	*30%*	*48%*
62.	*Understanding information presented visually*	*26%*	*40%*
63.	*Understanding information presented visually*	*12%*	*23%*
64.	*Understanding information presented visually*	*31%*	*44%*

APPENDIX E - Consent Letter

Walter Sisulu University

Private Bag

Butterworth

4960

20 March 2012

Walter Sisulu University

Private Bag

Mthatha

5100

Dear Sir

I am currently pursuing a master's qualification (M.ED.) at the University of South Africa UNISA in the field of Adult Education. In order for me to complete my degree, I have decided to do a research at the Faculty of Science, Engineering and Technology (FSET), Extended Programme, Butterworth Campus. My mini-dissertation is entitled: An evaluation of the effectiveness of Academic literacy course as a support programme, in addressing the students' language needs.

I am requesting permission to conduct research at the FSET so that as a Centre we can strengthen the academic support that is provided to students in the Extended Programme. This letter serves to inform you that the information gathered will be solely for research purposes and that responses will be treated with the utmost confidentiality and participants will remain anonymous. Participants can withdraw at any stage.

For your perusal, I have attached the consent forms for students and the lecturer and the curriculum for Academic Literacy Course.

Yours truly

Y.Y. Xorile -Ludidi

Testing for Access and Placement & FET Coordinator

Walter Sisulu University

Tel: +27 47 401 6390

Email: yludidi@wsu.ac.za

APPENDIX F- Research Ethics Form

DIRECTORATE OF RESEARCH DEVELOPMENT

RESEARCH ETHICS FORM

This form has eight sections. Applicants must complete section one and at least one of the other six sections and the administrative section where applicable. The appropriate recommendations, signatures and dates should be obtained before submission to the Directorate of Research Development.

SECTION ONE: GENERAL

1.1 Name of Principal Researcher:………………………………………………….

Department:……………………………………………………………………

Faculty:…………………………………………………………………………..

Title and Qualifications……………………………………………………….

Office Tel:………………………………..Cell………………………………….

Fax:……………………………………Email:…………………………………..

1.2 Name(s) of Co- Researcher(s):………………………………………………..

Department:……………………………………………………………………

Faculty:……………………………………………………………………….

Title and Qualifications………………………………………………………..

Office Tel:……………………………….Cell……………………………………

Fax:……………………………………Email:……………………………….

Name(s) of Co- Researcher(s):…………………………………………..

Department:………………………………………………………………

Faculty:…………………………………………………………………….

Title and Qualifications…………………………………………………..

Office Tel:……………………………….Cell……………………………………

Fax:……………………………………Email:……………………………….

Project Details

1.3   Full title and Abstract of the Project:

1.4   Research Problem

1.5   Research Objectives

1.6   Research Methodology

1.7   Expected Significance of Study

1.8   Other relevant Project Information

1.9   Proposed duration of Project (give start and end dates):

1.10   Place of Fieldwork:

1.11   Experimental Site:

General Ethical Concerns

1.12 Is this a degree oriented research? If yes, give names and titles of supervisor(s), Departments and telephone contacts

1.13 If researcher does not posses a doctorate degree, give names and titles of mentor(s), Departments and telephone contacts

1.14 Where confidentiality is required in the research project, explain how it will be ensured and guaranteed?

1.15 Explain how the findings of the research project will be disseminated taking into consideration recognition of ethical concerns?

1.16 It is required that consent is sought if human subjects are involved. Explain whether consent will be verbal or written. Attach a copy of the consent statement which will be applied to this study.

1.17 It is required that researchers declare any conflict of interest. Explain any conflict of interest (who, and how, and extent of conflict of interest). Failure to disclose any conflict of interest may result to disciplinary action.

1.18 Explain any physical, biological, chemical, safety, psychological or any related concerns/harm this research project can cause in its execution.

1.19   Is this a collaborative research with other institutions? If yes, give names, titles, qualifications, email addresses and telephone numbers of collaborators. Will additional ethical clearance be required from institutions of collaborators?

1.20   Will there be recorded media (audio, video or other – specify) involved in the execution of the research project? If yes, explain.

1.21   How will the research be funded? If human subjects are participants, have costs for transportation, feeding, and honoraria been factored into the budget? Explain.

SECTION TWO: BIOMEDICAL RESEARCH ETHICS

2.1   Indicate type of research: Basic research/ applied research/ clinical/medical equipment trial/experimental/epidemiological/ observational/ psychological/other – specify

2.2   Explain statistical concerns for sampling and statistical techniques to be used

2.3   Indicate which of the following procedures will be used for data gathering?

Structured interview/ Questionnaire administration/Review of existing records/ medical examination/urine and analysis/fecal samples and analysis/ body fluids and

analysis/blood sampling and analysis/biopsy/ plant components/experimental animals/other (specify)

2.4   Indicate which type of human subjects are included in the research: humans in existing data/healthy persons/patients/individuals who are sick (or ill)/males/ females/ pregnant persons/professional/ prisoners/fetuses/ cadavers/ other types of human material (specify)

2.5   Explain how samples and specimens will be disposed of.

2.6   Are there any financial benefits given to the researchers by pharmaceutical companies? If so, please indicate and explain how this does not affect research objectives.

2.7   Indicate and explain what types of risks are involved in the execution of the project and steps to be taken to reduce the risks? The risks should include pain, discomfort, stress and strain, accidents and other complications

2.8 Are the methods used tested, recognized and established? If no, how were the methods derived?

2.9 Is there a pilot study phase of the project? If yes, does it take into consideration the anticipated risks and how they can be reduced?

2.10 Will there be need for interim analyses? If yes, explain.

SECTION THREE: ANIMAL AND PLANT RESEARCH ETHICS

3.1 Indicate type of research: Basic research/ applied research/ diagnostic procedures/animal biology/animal production/animal management/environmental study/ production of biological products/ psychological/other – specify

3.2 Which of the following procedures will be performed on the animal in the execution of the project? Observations with interferences/conscious & unconscious intervention/physiological challenges/surgical/invasive intervention/genetically modified animal/ death/other (specify)

3.3 Why must animal(s)/plant(s) be used in the research? Is there no alternative method that can be used to carry out the same project?

3.4 Which animal(s)/plant(s) will be employed for the research project?

3.5 Explain why the choice of the animal(s)/plant(s)

3.6. The use of animals/plants in research should be minimized as much as possible. Can the animals/plants or animal material be used for another research project? What will be the fate of the animal(s)/plant(s) at the end of the project? Will the animal(s) be euthanised? If so give generic name(s) of drug, the dosage and the route of its administration.

3.7 What is the number of animal(s)/plant(s) to be used in the research project? Is that the most minimum? Explain how the number can be further cut down.

3.8 From where will the animal(s)/plant(s) be obtained and how will the transportation to research site be carried out?

3.9   Where and how will the animals be housed during the execution of the research project? How many animals will be put in one cage or pen? Is the housing site quarantined? If plants, where and how will they be grown/kept during the execution of the project?

3.10   What diet will the animal(s) be put on? What will be the chemicals/fertilizers/manure used for the plant(s) during the experiments? Is there any special care required? If so explain.

3.11   Who and how will the animal(s)/plant(s) be monitored after work hours, during weekends, public holiday and vacation?

SECTION FOUR: HUMAN AND SOCIAL SCIENCES RESEARCH ETHICS

4.1   What type of research is this?

4.2   Are the interviews structured or otherwise? Explain the type of questionnaire being administered (open ended questions or otherwise).

4.3   Describe the rationale and reason for choosing the study population

4.4   What is the purpose of the study? (Is it a pilot study or a full study?) Is this study going to generate new knowledge or will confirm existing knowledge?

4.5   Describe how recruitment will be conducted taking into consideration social and cultural aspects, screening measures and authorization.

4.6   Which processes will be used in obtaining informed consents, and why are these processes chosen over others?

4.7   What methods will be used for non disclosure of sensitive data/information, and what risks are associated therein?

4.8   What are the direct and indirect benefits to participants of the study?

4.9   Explain how the study complies with legislation and individual rights to privacy

4.10   Is there any conflict of interest? If so, how is it accommodated without compromise in the conducting of the research?

SECTION FIVE: BUSINESS, MANAGEMENT AND LAW RESEARCH ETHICS

5.1   What type of research is this?

5.1   Will information be collected from corporations and companies or other agencies about individuals without their direct consent? If so, how will the information be sought and why will individual consent not be sought?

6.3   If recorded media (audio, video or other) will be used in the execution of the research project, specify where the materials will be retained after the study; for how long will they be retained; and how they will they eventually be disposed of.

SECTION SIX: EDUCATION RESEARCH ETHICS

6.1   What type of research is this?

6.2   Will information be collected from institutions such as universities, schools, employers, government and related, or other agencies about individuals without their direct consent? If so, how will the information be sought and why will individual consent not be sought?

6.3   If recorded media (audio, video or other) will be used in the execution of the research project, specify where the materials will be retained after the study; for how long will they be retained; and how they will they eventually be disposed of.

6.4   Will children be engaged in the research? If so which age grouping? Will the children be those in the care of a local authority, orphanage, foster home, or living with their parents? Please explain.

6.5   Does the research focus on participants with special educational needs? Physically or mentally ill? Vulnerable in other ways? Racial or ethnic minority? Please explain.

6.6   Does the research advance knowledge in Education?

SECTION SEVEN: OTHER SPECIALIZED RESEARCH ETHICS

7.1   Which of the following health and safety hazards to other animals, humans and or environment will be introduced during the execution of the research project? Teratogens/carcinogens/anaesthetic gases/genetically modified organisms/ biological / chemical / radioactive /geological hazards/other (specify)

7.2   If plant or animal, is it an endangered/exotic species?

7.3   Do you have understanding of ethical issues, guidelines, and good code of conduct in performing research that deals with hazardous, toxic and ionizing radioactive materials/exotic or endangered species? Explain your understanding in relation to the study you intend to undertake, if applicable.

7.4 Why did you choose to conduct research using hazardous, toxic and ionizing radioactive materials/ exotic or endangered species? Could you not have avoided using the materials? If not, explain why?

7.5 What measures will you take to ensure that only the most minimum quantities of materials are used through out the experiments? Such measures should include keeping a logbook.

7.6 How would you control exposure of hazardous, toxic, ionizing and non ionizing radiations to staff, students, university community, and the biophysical environment?

7.7 Do you have adequate knowledge of appropriate accident and emergency procedures in place during the conduct of the research activities?

7.8 Explain how you will dispose of the wastes that will be generated during the research activities.

7.9 Will appropriate warning signs be displayed where necessary? If yes, which signs, and if no why not?

SECTION EIGHT: ADMINISTRATIVE SECTION

I, ………………………………….confirm that the information provided in this form to the best of my knowledge is accurate, and that the project will be executed in accordance with the University Research Ethics Policy, the University Mentoring Policy, and the University Research Policy.

Signature of (Principal) Researcher:

Date:

Faculty Research Ethics Committee

1. Name of Faculty Research Committee Chair:

   Recommended/Not recommended (delete where applicable)

   If not recommended, why?

   Date:

   Signature:

2. Name of Executive Dean of Faculty:

   Recommended/Not recommended (delete where applicable)

   If not recommended, why?

   Date:

   Signature:

University Research Ethics Committee

UREC recommendation(s), date of consideration and Signatures of Director: Research Development and Chair of UREC:

1.   Recommended/Not recommended (delete where applicable)

      If not recommended, why?

      Date:

      Signature of Director: Research Development:

2.   Recommended/Not recommended (delete where applicable)

      If not recommended, why?

      Date:

      Signature of Chair:

APPENDIX G: LIST OF TABLES