THE INFLUENCE OF SELF-EFFICACY ON LEARNING IN SELECTED SECONDARY SCHOOLS IN THABONG AND MANGAUNG

by

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DEDICATION

This dissertation is a dedication to my sister Maditlhare who passed away at an early age in 1999. She was always full of life, love and dedication up to the end. Wherever you are, your abundance of love and memories will stay.

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To my brother Mike, for his unconditional support during those hard times. You have been an anchor of strength and a true brother. My deepest gratitude goes to you.

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To my brothers and sisters, thank you for your unuttered motivation, thank you for being there for me.

Lastly, thanks to Mrs Petru Kellerman who assisted greatly with the alignment of this research document.

DECLARATION

I declare that:

"THE INFLUENCE OF SELF-EFFICACY ON LEARNING IN SELECTED SECONDARY SCHOOLS IN THABONG AND MANGAUNG".

is my own work, that all the sources used or quoted have been indicated and acknowledged by means of complete references, and that this thesis was not previously submitted by me for a degree at another university.

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L SEGALO DATE

ABSTRACT

The aim of this study was to assess learners' self-efficacy for self-regulated learning in selected secondary schools in Thabong and Mangaung. The aim of the research was addressed by the study, through the examination of the differences of learners' sense of efficacy for self-regulated learning in four sampled schools. The four schools were grouped into high performing schools and low performing schools. Lastly the study highlighted the importance of self-regulated learning in Outcomes-based Education.

The study tested learners' efficacy of self-observation, self-judgement and self-evaluation. These dimensions were named, LESO, LESJ and LESE. A pool of questions was formulated. The research tested the dependent variables (gender, grades and school) and independent variables (LESO, LESJ and LESE) through a three-way ANOVA.

The results revealed a significant difference between the two groups of schools with regard to gender. Female learners showed more self-regulatory skills than male learners. High performing schools learners showed statistically higher levels of self-efficacy for self-regulated learning than learners from the low performing schools. The discussion and interpretation of the results, as well as suggestions for future research, are based on the data analysis of the study.

* The male gender is used throughout the study for the sake of time saving and clarity, and does not reflect sexism.

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CHAPTER 1

INTRODUCTORY STUDY ORIENTATION

1.1 BACKGROUND TO THE PROBLEM

The unacceptably high failure rates of grade twelve learners at public schools in South Africa is a matter of great concern for the government, the business sector, tertiary education and the public as a whole. It had been envisaged that the situation would improve after 1994, which was the year of democratic transformation. Plans on how the eminent problems in the education of the country would be brought under control are fully documented in the Reconstruction and Development Programme of the African National Congress (ANC 1994:60). This document contains plans and suggestions as to how a better education can be brought to all South Africans.

In 1995, the then Minister of Education enthused about more efficient management of education in public schools as means of bettering the high failure rate of grade twelve learners (Department of Education 1995:21). Time has, however, proved such an enthusiastic assumption wrong as the situation concerning failure rates is currently not improving satisfactorily. There has been extensive finger pointing as to who are to shoulder the responsibility for the dismal failure of grade twelve learners in public schools. Should it be educators, the Department of Education, parents or learners?

From the side of the national and provincial departments of education, diverse programmes have been implemented around the country in an effort to change the situation. Among these programmes are: supplying educators with empowerment programmes, building of new school facilities and adopting a new education paradigm, namely Outcomes-based Education (OBE) (Department of Education 1998 :43).

1.2 SOCIETY AS A PROBLEM

Social institutions, such as the home and the school, aim at preserving what is good in the community. Education, specifically, has the function of protecting the heritage of the past and planning for survival in the future. The content of education is thus a selection of that cultural heritage, assessing individual skills, competencies, knowledge, customs and beliefs of the learners (Van Zyl and Duminy 1976:30; McCombs and Marzano 1990:135; Ellis 1985:88).

The social problem of the unacceptably high failure rates of grade twelve learners in South Africa seems to be located at the functions of its socializing institutions, in particular the school (Donald, Lazarus and Lolwana 1997:178). The school, as a faculty of society's socializing agent, appears to have failed to adequately equip learners with the necessary learning skills or to impart positive attitudes towards learning and education. Rather, emphasis tends to be placed on artificial measures of success.

For a long time examinations have been the principal indicating tools of what socially acceptable standards of academic achievement are in South African schools, and failure to measure against those standards has been rewarded with punishment. Punishment is applied against the learners who fail to measure successfully against the social yardstick of formal examinations (Sullivan 1990:48; Breidermeir and Stephenson 1967:24; Banathy 1996:35; Brym and Fox 1987:111).

Punishment has many psychological bearings on the individual learner. Feelings of being unwanted, as well as an inferiority-lowered self-esteem, are some of these outcomes (Shepard and Smith 1989:116). Through punishment, learners are given fixed labels. Furlong (1985:127) says that official and public labelling has profound effects on the individual learner regarding the future. The social

punishment might appear to be subtle, but it is very devastating for learners who fail to pass at the end of their schooling days. On the other hand, those who manage to pass are socially rewarded as hard working and given positive feedback (Shepard and Smith 1989:128).

Excessive pressure placed on learners by society can be regarded as unjust, especially if such pressure is not of their own making. The force of social rewards of passing and failing becomes clear when jobs and awards are given. Those learners who manage to pass well, are promised better positions and scholarships. The attainment of good marks is seen as the ultimate priority (UPE 2001:66). The learners who struggle but manage to pass, seem to be sidelined by higher institutions of learning, as well as the workplace. The numerous social problems which are caused by the high failure rates of grade twelve learners, appear to widen the already unfavourable gap between the socio-economic levels of South Africans.

It would be important then to inculcate in learners the best possible skills to problem solving, personal development and positive thinking. Such an approach of enhancing a positive outlook on life could assist learners in making correct life choices. This way of thinking is supported by Van Zyl and Duminy (1976:14), as well as Griessel (1992:16), who agree that people generally reflect the attitudes which they have learned in their actions. Likewise, Reay (1994:27) describes attitudes as an affective aspect of man which has to do with the way he feels and thinks about tasks. In line with this viewpoint, it is the general assumption of this study that learners who have acquired self-regulated efficacy skills are prone to achieve academically, while those who lack these skills tend to struggle academically.

It is through the formation of attitudes that a particular life-style is shaped. Life-style and attitudes are inter-linked; therefore it seems difficult to dissociate the two.

Life-style, in particular, seems to direct what the individual will prefer doing in life. The process of life-style also seems to link with one's own view of the world or paradigm. In preference an individual may choose to adhere to a set of strict rules or opt for a set of lax ones. This research will investigate how individual life-style patterns influence people on a daily basis in carrying out their duties and conducting themselves.

According to Sartre (1992:719), the learner's original project of his learnership would be to accomplish certain scholastic standards in order to prepare himself for a future vocation or profession. During this process of striving towards achievement, the learner might be distracted by his own attitude. In realizing his mistakes, the learner has to change towards what Sartre refers to as radical conversion.

Radical conversion implies the acceptance of a new set of choices. It will be paramount to modify the learners' and the society's original project of education in order to change the situation. This could be done by bringing about the realization of better developmental education that would challenge the learners to be more efficacious. Gagne (1985:219) alludes to personal attitudes that an individual holds as responsiveness and readiness to stand against impeding obstacles to successful learning.

Learning success is largely determined by two learner variables, namely ability and attitude. Success in learning is, according to Claxton (1990:8), not necessarily the factors which are often suggested, such as: demoralization of educators, irrelevant curriculum, poor ethos (lack of discipline), lack of leadership, lack of resources and decline of moral standards. He argues that failure usually reflects the meaning the individual makes out of the situation. For example, failure might be looked at as permanent or temporary depending on the experience of the learner. Claxton (1990:8) concludes that for whatever one may say about the curriculum, resources,

teaching methods or discipline, it is in the mind of each learner that the learning is or is not taking place.

Likewise, Reay (1994:33) says that learning is associated with the following:

(a) The need for change: new behaviours and attitudes which can be unsettling for the individual learner, should be done away with. This process of learning should encompass the realization of past and present attitudes and behaviours if they led to any improvement in the development of the particular learning activity. This need for change invites the learner to be an active and conscious participant in the process of learning.

(b) The need for aims and objectives: the learner formulates the purpose for the particular learning activity. The aim should be realistic and achievable. It means that the learner should be objective in assessing his or her potentials.

(c) The need to see the benefit: here the focus is on the worthiness of the ultimate results to be achieved. If the benefits for studying hard are associated with positive feedback, they will be worth persuading.

(d) Lastly, the need to own the situation: this is the process of full involvement in the learning activity. Learners should feel that they are in charge of their learning and are learning for their own benefit. This creates a sense of personal responsibility for learning.

From the above, the importance of and approach to learning are outlined. It could be beneficial for learners and educators to incorporate these principles into their cognitions within the education situation.

1.3 IMPORTANCE OF THE STUDY

The high failure rates of grade twelve learners in South African secondary schools has prompted this study. There is no doubt that the future of learners who continue to fail and drop-out of school due to inability to cope with academic work, would be adversely affected.

It is therefore the aim of this study to highlight to educators ways and means of improving their approach to learning through the utilization of observational learning. Self-efficacy as a pattern of behaviour that learners can acquire in order to successfully organize and execute their work to produce particular outcomes, is regarded as of paramount importance in academic progress (Bandura 1995:2).

The study on self-efficacy could possibly, be of an assistant for the research community, policy makers, education practitioners, learners and parent community. The following could be ways in which different stake-holders in education could benefit:

- The research community could be encouraged to further research into the discipline;
- Policy makers could put more incentives in education to motivate learners;
- Educators could better manage the learning environment through the use of modelling and persuasion;
- Learners could be more assertive and self-motivated by using self-efficacy skills; and
- Parents could be taught to create positive learning environments at home.

1.4 PROBLEM STATEMENT

Greater monetary input by the government seems not to have produced the desired improvement in academic outcomes (ANON 2000:37). Against the backdrop of these widely applauded initiatives by central government, one may rightfully ask why apparent improvement has not materialized thus far as regards grade twelve results. The grade twelve failure rate between 1997 and 2000 has not shown any significant improvement.

Possible reasons have been given for the low pass rate at public schools. These include the lack of resources which can be attributed to the legacy of the past unequal distribution of wealth (Le Roux 1994:38), the lack of enough skilled educators (Sowetan 2000:27) and the lack or shortage of management skills of school managers. Jansen (2000:17) alludes to the misuse of learning and teaching time as many classes commence behind time. Poverty, violence, gangsterism, unequal opportunities and lack of quality educators, are a few of the possible factors that could be the real reasons behind the incapacitated talents and lost opportunities for learners at public schools.

The learners' level of self-efficacy towards problems encountered during the learning process seems to escape the attention of educators, the government and other role players who are closely involved in efforts to resolve the problem of high failure rates among grade twelve learners in the country. Major effort has been confined to scape goating, trying to find who should be left with the blame. Time has been wasted on making and responding to political statements. It is believed in this study that the sustained effort of learners to overcome difficulties in the way of learning, should be investigated in greater detail.

In South African schools the aforementioned problems (for example, under-qualified educators and the lack of resources) are regarded by many as the sole causes of

high failure rates. However, in this study, it is believed that through self-management, according to the self-efficacy theory, the mentioned problematic variables can be controlled by individual learners once they have acquired the necessary skills to overcome environmental difficulties (Bandura 1995:31).

Self-efficacy is directly linked to the belief which an individual has of his capabilities and skills, or the lack thereof, to organise and execute the courses of action required to manage prospective situations (Bandura 1977a:194; Bandura 1995:3; Marsh 1994:82). Efficacy beliefs influence how people think and feel, and how they motivate themselves in engaging in a particular action. This definition of self-efficacy implies that learners who are made conscious of their potential, are in a better position to take control of their situation and those who are not would find it extremely difficult to realize their true potential, if not impossible (McCombs and Marzano 1990:60).

The research questions that emanate from the research problem include the following:

- How do people learn?
- What is self-efficacy?
- Do learners who fail in grade twelve have low self-efficacy?
- Do learners who pass in grade twelve have high self-efficacy?
- What are the factors that are attributed to failure by learners?
- Which factors are attributed to success by learners?

- How can learner efficacy in the classroom be enhanced?

1.5 AIMS OF THE STUDY

In order to deal with the high failure rate of grade twelve learners effectively, a study such as this one is of paramount importance to examine the levels of self-efficacy of learners. A lack of self-efficacy may be a cornerstone of the high grade twelve failure rates in South African schools. This research will thus serve to investigate the influence of self-efficacy of learners on their academic performance. The schools with grade twelve pass rates below forty percent are classified as dysfunctional schools (Express 2000:8). The grade twelve pass rate in the Free State province between 1998 and 2000 yielded an average of 55%. This average is in practice very low for the township schools as it is masked by the high pass rates of the former white schools (Express 2000:8). The dysfunctionality of these schools which have underperformed, according to Donald *et al* (1997:128), can be attributed to an inadequate education support system for identifying individual difficulties in learning.

The aim of the study is thus to contribute to and amplify the existing body of knowledge as regards grade twelve learners' high failure rates at secondary schools in South Africa.

In order to accomplish the above-mentioned aims, the following objectives should be realized by this study:

- To ascertain how people learn;

- To assess what self-efficacy entails;

- To determine if learners who fail have low self-efficacy;
- To establish if learners who pass have high self-efficacy;
- To establish whether lack of self-efficacy is attributed to failure by learners;
- To determine whether self-efficacy is attributed to success by learners; and
- To supply guidelines for enhancing learner efficacy in the classroom.

1.6 RESEARCH DESIGN AND METHODOLOGY

1.6.1 The design

In this study the quantitative approach will be utilized to gather relevant data in order to arrive at a conclusion regarding the research problem. Use will be made of causal-comparative design to obtain information.

Charles (1995:246) says that this type of research explores possibilities of cause and effect though it cannot demonstrate cause and effect. The causal-comparative research process allows the researcher to formulate a hypothesis that will either confirm or refute the observation undertaken.

With regard to this study, possibilities of cause and effect are researched. The competing possibilities which exist as to what caused or are causing the high failure rates among grade twelve learners in South African schools, are focused on. Examples of such competing variables are poor environmental facilities, undesirable socio-economic backgrounds, under-qualified educators, content-based curricula and apartheid legislation. The learners' sense of efficacy as one of these many possibilities that might affect learners academic success, is the

centre of this study. The learners' sense of efficacy is different from other mentioned external variables as it is internalized by learners themselves.

1.6.2 Population and sample

Borg and Gall (1989:213) define the research population as the large group being studied to learn about. In this regard learners from secondary schools in Thabong (Welkom) and in Mangaung (Bloemfontein) which had a pass rate of less than forty percent or a pass rate above seventy percent from 1997 to 2000 in the grade twelve examinations served as the sample population.

Sample is described by Charles (1995:28) as a small number of people selected from the population, containing the characteristics of the population to be freely generalized. From this generalization inferences can be made. For the purpose of this study, the sample to be used included 300 learners from two selected secondary schools in Thabong and Mangaung.

From each school,150 learners were selected using non-probability sampling, making it a total of 300 learners. Non-probability sampling is described by McMillan and Schumacher (1997:160-63) as a method of sampling whereby the researcher makes his own judgement about whom to include to participate in the process of the research. There were 75 males and 75 females from sampled schools A (schools with a grade twelve pass rate below forty percent). There were 75 males and 75 females from sampled schools B (schools with a grade twelve pass rate above seventy percent).

1.6.3 Data collection

Data collected was done through literature study and questionnaires.

1.6.3.1 Literature study

A review of literature was undertaken to find out what other researchers have found regarding the topic under investigation. As suggested by Ary, Jacobs and Razivieh (1990:67), an overview of current research assists in supplying the necessary guidance to the existing problem investigated. A literature study allows a researcher the opportunity to obtain a radical, systematic interpretation of the object under scrutiny (Fourie 1994:23). Leedy (1993:94) highlights the fact that literature to be consulted should have relevance and show the history of work already done. Relevance refers to the ability of sources to give perspective and shed light on the studied topic.

Borg and Gall (1989:117) warn that researchers should not fall into the obvious, but should be alert to research possibilities that have been overlooked. Van Damen (1990:80) also stresses that cognisance should be taken of the fact that literature should help broaden perspectives, seek new directions and keep abreast with the work of other researchers.

For this research, numerous sources of literature dealing with self-efficacy and self-regulated learning was consulted.

1.6.3.2 Questionnaires

After entrée had been obtained, the survey method (questionnaires) was utilized to collect primary data. A questionnaire may be defined as a group of questions in writing, applied to obtain data from the respondents (Vogt 1993:279). There are two kinds of questionnaires, namely closed-ended questionnaires and open-ended questionnaires. Only closed-ended questions were employed in this study to

channel the responses of the learners. The questionnaires were self-administered and learners completed them at their own time. The questionnaire, which is a self-report, measures learners' sense of efficacy using a rating scale.

The participants (learners) were assured of anonymity. They were given the guarantee that their identities will not be revealed as no names will be required when completing the questionnaires. The participants were also ascertained about confidentiality of the material used in gathering data, as none will be made available to any other party, but to the researcher only.

1.6.4 Data analysis

Data analysis is about interpreting data that has been collected. Analysis is done to find out whether or not the data collected supports or contradicts the hypotheses being tested or the research questions being asked (Imenda and Muyangwa 2000:166).

For this research a Learners' Self-efficacy for Self-Regulated Learning Scale (LSSLS) was used to test the learners' perceived efficacy for self-regulated learning. This scale was based on a four-point scale to measure the strength, generality and level of efficacy for self-regulated learning among secondary school learners in grade twelve in the Free State province.

Mean scores and standard deviations of the learners from both high performing schools and low performing schools, regarding their sense of efficacy for self-regulated learning were estimated. The responses from schools A and schools B were compared to indicate whether any difference existed between the two. An analysis of variance (ANOVA), which is a statistical technique for testing for differences in the means of several groups, was employed. In this research an ANOVA was applied to test whether a statistical difference in group means existed

between the two groups of schools. Howell (1995:10) mentions that ANOVA analyzes the total variations that can be explained by the independent variables. The ANOVA employed tested the following dimensions of the questionnaire for the Learners' Self-efficacy for Self-Regulated Learning Scale: The efficacy of self-regulated learning for goal setting, self-evaluation, self-monitoring and time management. Each dimension was loaded with items that totalled the number of forty questions for the scale.

1.7 RESEARCH HYPOTHESIS

This research sets out to test whether the present observation (high failure rate) is due to individual self-efficacy of learners and not as otherwise suggested by educational role players.

Null hypotheses to be tested include:

- There is no significant difference among learners in the two grouped schools with regard to self-efficacy for self-regulated learning on self-observation.

- There is no significant difference among learners in the two grouped schools with regard to self-efficacy for self-regulated learning on self-judged processes.

- There is no difference among learners between the two groups of schools with regard to self-efficacy for self-regulated learning self-evaluation.

- There is no difference of self-efficacy in male learners with regard self-efficacy for self-regulated learning.

- There is no difference of self-efficacy in female learners with regard self-

efficacy for self-regulated learning.

1.8 VARIABLES TO BE STUDIED

The independent variables to be examined in this research included gender, grade, and the school. This independent variables were tested on the efficacy dimensions of efficacy for self-regulated learning which are: Learner efficacy for self-observation (LESO), learner efficacy for self-observation (LESJ) and learner efficacy for self-evaluation (LESE), and are explained elsewhere in chapter two and chapter four.

The dependent variable for this study was self-efficacy for self-regulated learning.

1.9 LIMITATIONS OF THE STUDY

The study was undertaken at secondary schools in Thabong (Welkom) and Mangaung (Bloemfontein). Therefore, the findings could not be generalized to all other township schools in South Africa. The following are shortcomings flowing from this:

- Not all the urban area schools were included in the study;
- No comparison between township schools and historically Model C schools was investigated; and
- No secondary schools from the rural areas were included.

1.10 LAY-OUT OF CHAPTERS

A division of chapters to follow will direct the reader as to how the study is structured.

CHAPTER ONE

This chapter introduced the reader to the background of the study problem, as well as the objectives of the study. The methodology used, the demarcation of chapters and the explanation of relevant concepts were discussed.

CHAPTER TWO

Chapter two is an in-depth review of relevant literature.

CHAPTER THREE

Chapter three deals with research methods used.

CHAPTER FOUR

The process of data collection, how it is analyzed and possible problems encountered are discussed in this chapter.

CHAPTER FIVE

In this final chapter, the summary of the research, recommendations and conclusions are spotlighted.

1.11 TERMINOLOGY

The most important terms to be used in this study, are explained and defined for the sake of clarity. According to Fourie (1994:7), such explanation is essential in ensuring that meanings are constant and understandable throughout a study.

Attribution is a way of explaining a cause to an incident and could be subjective or objective (Weiner 1985:548).

Learning is a life long activity through which information is acquired by means of the five senses, including intuition. Gredler (1992:36) sees it as the acquisition of information derived from observation or conditioning.

Outcomes-based Education (OBE) is a curriculum that is a learner-centred, results oriented design, based on the belief that all individuals can learn at different paces (Spady and Schlebush 1999:59).

Reciprocal determinism is the contention that the environment, the person and the person's behaviour all interact to produce behaviour (Bandura 1977a:193).

Reconstruction and Development Programme is a policy of governance adopted by the African National Congress in 1994 to address the socio-economic problems of South Africa in the new South Africa (ANC 1994:60).

Self-efficacy is a sustained effort to perform, resulting from an individual's belief in his capabilities (Bandura 1977a:80).

Self-regulated behaviour is that behaviour which is regulated by one's own performance standards, moral codes, or imagination (Schunk 1996:338).

Socialization is the introduction of the individual into the society (Donald, Lazarus and Lolwana 1997:178).

1.12 CHAPTER CONCLUSION

This research study is an attempt to determine the underlying contributing factors leading to the high failure rates among grade twelve learners at secondary schools in the Free State province at the moment. The researcher is of the opinion that, although a number of factors may contribute to the problem of high failure rates among grade twelve learners, a lack of self-efficacy for self-regulated learning as a major element, might have been underestimated until now. The importance of the study was presented in this chapter, as well as the methodology and the hypotheses to be tested. Concepts which are to be used in the study were also explained.

In chapter two a literature study is undertaken to research available knowledge on learning and self-efficacy in order to find answers to the questions posed in paragraph 1.4.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter one introduced the research problem and an indication was given of how the research will be structured. It was also highlighted in the chapter that the problem of unacceptably high grade twelve failure rates in South Africa needs to be studied.

The purpose of chapter two is to study relevant literature on learning theories, as well as on self-efficacy for self-regulated learning. Self-efficacy is believed to influence a person's choice of activities, his efforts that would be expended, as well as his persistence at completing a task. According to Bandura (1977a:80), the person who demonstrates a high level of efficacy would show less fear and inhibition than the person who displays low self-efficacy.

Self-regulated learning seems to occur when learners activate and sustain their cognitions and behaviours directed at goal attainment (Schunk 1990:71). Zimmerman, Bandura and Martinez-Pons (1992:663) agree that learners' self-regulatory behaviour increases their perceived self-efficacy to achieve academically.

During the last few decades, the study of self-efficacy has been applied to different human situations, like the treatment of a phobia by Bandura (1977b:205). In this treatment, the theory of self-efficacy has enabled the prediction of behaviour. Subjects who had low self-efficacy showed fear of snakes and those with higher levels of efficacy showed higher self-efficacy. In another study of people addicted to substance abuse, Marlatt, Baer and Quigley (1995:289) showed that there is a

difference between the behaviour of people with high levels of self-efficacy and those with low self-efficacy. Their study showed that subjects who demonstrated high self-efficacy had better coping skills to beat the habit than those with low self-efficacy. Zimmerman (1995:202) demonstrated that the levels of self-efficacy in solving mathematical problems correlated with learners' ultimate achievements in the area of mathematics.

In this study, the level of self-efficacy of secondary school learners will be the focus. The study will revolve around the self-regulatory skills of learners as a way of enhancing their academic achievements, which in turn increase their sense of self-efficacy.

In the light of the above background, chapter two will henceforth highlight the background against which the theory of efficacy developed. The chapter will also examine closely the various factors that could enhance or promote efficacy of learners for self-regulated learning. This chapter will specifically deal with the following aspects: learning theories, the reciprocal determinism theory of self-efficacy, self-regulated learning, constructs related to self-efficacy and a summary of the chapter.

2.2 LEARNING THEORIES

Over the years, various learning theories have emerged in an attempt to explain human behaviour. These theories deal with the phenomenon of learning and how learning can be enhanced (Gredler 1992:10). In the following discussion, the assumptions of a number of different schools of thought regarding the process of learning, are highlighted.

2.2.1 Learning

Learning has been defined by different schools of thought as a change in behaviour resulting from experience, knowledge attainment, carrying out instructions, studying, observing and imitation (Hamilton and Ghatala 1994:22). Learning is not restricted to studying only, but it also encompasses habit formation and personal preferences, likes and dislikes (Giel1997:36). Behaviour that has been learned can also be unlearned and new or alternative ways of thinking and doing can be acquired.

Behaviour that has been learned cannot necessarily be directly perceived, but the resulting change in behaviour can. Learning can take place through different processes, namely habituation, associative learning and social cognitive learning (Hamilton and Ghatala 1994:37).

Habituation is when learning occurs as the result of being conditioned or exposed to a stimulus over a long period of time (Gredler 1992:36). Food, traffic and the weather are examples of stimuli that people get used to over time. Referring to habituation learning, Giel (1997:34) focuses on the adaptiveness of people to stimuli in the environment to such an extent that they do not respond to such stimuli anymore.

For example, it will be a waste of time to always respond to a generally unimportant stimulus like a moving aeroplane in the sky. As such, the explanation of behaviour and learning by this school of thought is regarded by many researchers as very limited as it neglects the will power of individuals to self-determine their actions. According to habituation learning, the individual always acts involuntarily as far as stimuli is concerned (Louw and Edwards 1993:261).

Another process of learning is called associative learning. Associative learning takes place through the following processes:

- Classical conditioning; and
- Operant conditioning.

Classical conditioning happens when people expect or predict that something would take place at a certain time because of the past occurrence of the incident. Operant conditioning takes place when responses that have produced positive outcomes are again repeated. These two associative learning mechanisms are concepts developed by the behaviouristic school. Learning is explained in terms of observable stimulus and response events. The cognitive or mental aspect of an individual is neglected as it cannot be scientifically studied (Hamilton and Ghatala 1994:14). Exponents of this school are Pavlov, Watson, Thorndike and Skinner (Louw and Edwards 1993:262).

The cognitive school came into being as result of the reaction towards the behaviourists' apparent neglect of man's mental aspect in their studies. The basis of the cognitive school of thought is that human behaviour should be seen as purposive and goal directed and cannot be reduced to narrow explanations (Bandura 1978:344).

Learning is explained in terms of thought processes, perceptions and consciousness. By thought processes, it is meant that individuals have the ability to think about and analyze things according to how they perceive them. Hence one situation is exposed to different interpretations. Through conscious efforts, individuals are able to plan ahead and reconcile their past experiences in their planning. Exponents of this thinking are Piaget, Vygotsky, and Kohler (Louw and Edwards 1993:270).

Social cognitive learning takes recognition of the individual's self-thinking, self-planning and self-determination (Bandura 1977a:23). According to this school, learning takes place though social interaction. People learn by observing the behaviours of others. Later, when conditions permit, they emulate such behaviour to suit their particular conditions (Gredler 1992:302).

Social cognitive learning includes both cognitive learning and observational learning. The cognitive aspect of social cognitive learning recognizes the important role that is played by the thinking and rational aspect of the individual and his ability to process information for himself. The social part of social cognitive learning on the other hand, accepts that a major part of learning takes place through watching others. Social learning enables people to gain knowledge and skills without necessarily having to experience the incidents themselves (Hamilton and Ghatala 1994:287). By means of human interaction, people are able to develop cognitions and standards for performance, as well as moral judgement (Hergenhahn and Olson 1997:349).

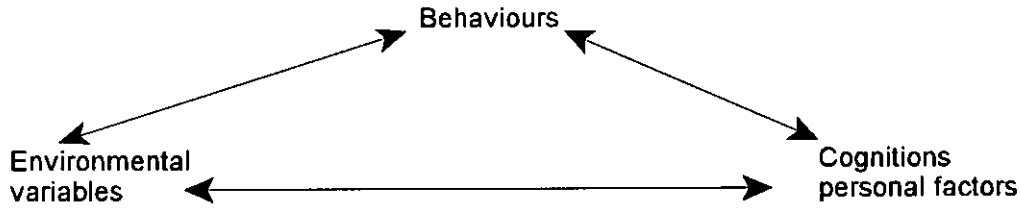
Reciprocal determinism and the self-regulatory system are important factors with regard to motivation of learning. In the following sections these aspects will be dealt with.

2.2.2 Reciprocal determinism

The theory of human learning, as advocated by Bandura, differs from other theories of learning mainly in terms of the causes of human behaviour. According to the behaviourist viewpoint, behaviour is controlled by environmental influences. This control by the environment is unidirectional, in that, the events of the world act upon the individual. As a result of the influences of the environment on the individual, it seems as though he becomes helpless to change the environmental circumstances (Bandura1977a:195).

On the other hand, cognitive theorists are of the opinion that the causes of human behaviour are found within the person. This phenomenon is referred to as personal determinism. The main adherents of this view claim that behaviour is the result of instincts, drives, beliefs and motivational factors within the person.

Figure 2.1. Human functioning as reciprocal interactions between behaviour, environmental variables, and cognitions and other personal factors



Source: Schunk (1989:84)

Although taking cognisance of the influence of the environment on the behaviour of the individual, cognitive researchers are much more interested in the mental processes of individuals. The relationship between the environment and the individual's cognitions becomes bidirectional or two way (Schunk 1989:84).

Bandura (1978:345), unlike cognitive theorists and many other behaviourists, views the relationship between behaviour, the person and the environment as a three way reciprocal process. According to figure 2.1, people are neither driven by inner forces nor automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocality in which behaviour, cognitions and environmental events all operate as interlocking determinants of one another.

According to the social cognitive learning theory of interaction, the process of learning involves a three way reciprocal interaction, rather than a bidirectional or a unidirectional one. For example, although the environment may have an impact on the individual, he could (cognitively) decide which behaviour to enact and when. In a situation where the individual had previously experienced difficulties within a certain situation, and he has learned to master them, he may no longer experience anxieties when faced with a similar situation in future.

The relatedness of the three determinants, namely the environment, the learner, and the subsequent learned behaviour, leads to a self-regulatory system (Bandura 1977b:193). For example, a learner who initially feels not capable because of his belief that he is not talented, might change his view if an educator shows interest in what he does, and gives him positive feedback through encouragement. Such a learner is moving into the direction of self-regulated learning.

A self-regulatory system makes it possible for people to evaluate their activities in terms of what they perceive as relevant and important. As a result of a self-regulatory system, the individual does not care much how he performs at tasks which have little or no importance to him (Bandura 1978:349; McCombs and Marzano 1990:60).

2.3 SELF-REGULATED LEARNING

The development of the concept of self-regulation of behaviour is an attempt by Bandura (1978:349) to disprove theories that explain behaviour merely in terms of external conditioners and punishments. Self-regulated learning refers to learners' self-generated thoughts, feelings and actions that are systematically oriented toward attainment of goals (Van den Aardweg and Van den Aardweg 1999:138,140). Such behaviour indicates that individuals have the capacity to have control over their behaviour and the kinds of outcomes they produce themselves.

Simply said, self-regulated learning is about learners taking responsibility for their learning, knowledge and skills.

Self-regulated learning entails the following elements:

- setting of goals: A learner should be able to know what he wants to achieve and how to achieve it;

- self-motivation: A learner should be passionate about what he wants to achieve;

- monitoring of progress directed at goal attainment: A learner should engage in self-checks like self-testing; and in the last instance

- practice: A learner should do corrections of the work that has not been mastered. Such corrections should be repeated over time to ensure perfection (Schunk 1996:354).

Learners can be made aware of their capabilities, as well as the fact that they are responsible for their own learning programmes. This process should be taught to learners so as to enable them to be pro-active. Self-efficacy is, according to Bandura (1993:136), learned through equipping learners with intellectual tools such as self-beliefs and self-regulatory capabilities to educate them for their life time. Myers (1994:76) says that learners can shift from a position of learned helplessness if they can self-regulate their learning activities. Zimmerman (1995:219; 1989:7) believes that self-regulation is acquired over a period of time, and that patience and persistency are the keys to acquiring the necessary self-regulative skills.

Self-regulation operates through certain sub-processes. If these processes are fully developed, they would allow the individual to control his own behaviour. The processes are self-observation, self-monitoring or self-judgement and self-evaluation. These processes develop and maintain positive beliefs about learning and anticipated outcomes of actions (Schunk 1990:71; Paris and Byrnes 1989:180). Table 2.1 indicates the sub-processes of self-regulated learning and how they might regulate the effectiveness of the learners in their learning.

Table 2.1 Component processes in the self-regulation of behaviour by self-prescribed contingencies

SELF-OBSERVATION	JUDGEMENTAL PROCESS	SELF-EVALUATION
PERFOMANCE DIMENSIONS Quality Rate Quantity Originality Authenticity Consequentialness Deviancy Ethicalness	RERSONAL STANDARDS Modelling sources Reinforcement sources REFERENTIAL STANDARDS Standard norms Social comparison Collective comparison VALUATION OF ACTIVITY Regarded highly Neutral Devalued PERFORMANCE ATTRIBUTION Personal locus External locus	SELF-EVALUATIVE REACTIONS Positive Negative TANGIBLE SELF-APPLIED CONSEQUENCES Rewarding Punishing NO SELF-RESPONSE

Source: Bandura (1977a:130)

2.3.1 Self-observation

Self-observation, as a self-regulatory process, refers to the assessment which an individual makes of his progress towards the attainment of a goal or goals. Assessment is measured against the behaviour applied to achieve the stipulated goals. Aspects of behaviour are observed against self-set standards. As shown in Table 2.1, under self-observation, behaviour could be examined in terms of the

following:

- quantity: This refers to the number of school tasks the learner has to complete within a certain given time. Quantity of work relates to time the learner spends on each learning area depending on the difficulty of work;

- quality: The worthiness of work done by the learner by the learner is of importance. The learner should be encouraged to produce work that has substance;

- originality: Here the focus is on the creativity which the learner has put into practice. Through the process of self-observation the learner has to be encouraged to come up with new ideas that will add to existing knowledge. The reproduction of knowledge through memorization should be discouraged;

- rate: This refers to the frequency or the number of times the learner engages in his work. The learner should record the number of times he sits down to study meaningfully;

- authenticity: The originality of the work the learner produces should be enhanced;

- consequentiality: This refers to the process whereby the learner starts to realize the importance of the work he does. The learner will find the work meaningful if undue pressure is not applied;

- deviancy: This entails the process whereby the learner self-assesses his work in terms of his stipulated goals; and

- ethicality: This aspect deals with the standards the learner applies to his work. Cheating or copying of work is discouraged.

According to Gage and Berliner (1991:264), the learner who applies self-observation to his own behaviour in terms of looking at his progress, will most probably be more informed about his own learning processes than the learner who does not practise self-observation. Self-observation of behaviour would imply that the learner will be able to manage his own work more efficiently.

2.3.2 Self-judgement process

Self-judgement concerns the evaluation of the activities the individual is engaged in. Bandura (1978:349) says that activities are evaluated in terms of the standards people set in order to achieve their goals. Figure 2.1 (paragraph 2.2.2) shows that individual standards are either externally or internally evaluated. External evaluations refer to the broader standards created by the public or the institution and which are placed on the learner to attain. Self-charged standards refer to the learner's individually designed standards.

The standards by which the individual evaluates himself would be determined by the importance of the task, the relevance of the task and the interest of the individual in the whole exercise. An individual would expend less effort if the task to be done bears little relevancy to his situation and if no interest is generated by his involvement. On the other hand, an individual would persist more if what is to be gained is of paramount importance and its implications are clearly relevant to his future.

Bandura and Cervone (1983:1017) agree that people tend to hold themselves responsible if they underperform due to inadequate preparation and lack of persistence. On the other hand, people who feel that they failed because of an

attribute of lack of capability are unlikely to hold themselves responsible for their failures. Bandura (1978:349) mentions that favourable judgements will elicit self-rewarding reactions, whereas unfavourable appraisal will activate negative self-reactions.

2.3.3 Self-evaluation

The final process of self-regulatory behaviour is called self-evaluation. Self-evaluation comprises of both positive and negative evaluation about one's progress. Positive evaluation indicates good progress levelled at goal attainment, as opposed to negative self-evaluation which refers to the situation where the desired progress is not attained. Schunk (1996:358) is of the opinion that negative self-evaluation is not demotivating when learners believe that they are capable of improving.

Self-evaluation also has standards or levels of achievement the learner intends achieving. In order to achieve the stipulated standards, the learner needs to have tangible motivators that are self-generated. The individual would either reward or punish himself for what he has achieved or not achieved. According to Bandura (1978:350), self-generated incentives can alter behaviour and influence the individual to perform more. Bandura and Cervone (1983:1019) mention that the accolades that go with performances that meet the desired standards are self-gratification and self-motivation to expand more effort to master what they want to achieve. This means that a sense of mastery of the work that has previously been a problem, would enhance the motivation of the learner. In so doing, the learner's sense of efficacy would also be increased.

In order for the student to successfully regulate his learning, goal setting and time management are very important. To be dealt with in the next paragraphs, is an outline of the importance of goal setting and time management.

2.3.4 Goal setting and time management

Goals are the driving forces that motivate people to persist to achieve something in life. People set and select goals for themselves which are based on their personal beliefs of their capabilities (Zimmerman1995: 219; Vrey 1979:225). Fox (1993:106) also maintains that goal setting is influenced positively by an aspiration or motivation to achieve something in life that is highly valued. People set goals based on what they believe they can achieve based on their capabilities. People who judge themselves as capable, tend to set challenging goals for themselves. On the other hand, people who judge themselves less capable tend to set goals that are less challenging.

Goals that people set for themselves provide the standard against which performance is gauged, and are thus motivational in nature (Bandura and Cervone 1983:1017). Goals can be divided into two groups, namely proximal goals and long range goals. Proximal goals in all likelihood promote greater motivation than is the case with long range goals. Through proximal goals it is possible to monitor the progress one has made. Long range goals are plans that should be achieved over a long period of time.

Proximal goals should be used as stepping stones to achieve the long range goal. Schunk (1990:72) mentions that self-efficacy for goal attainment is influenced by, amongst others, ability, prior experience, attitudes towards learning and social context. As an example of such influence is the fact that attitude would be negative towards goal attainment if the level of goal attainment is higher than the capability of the learner, but it would be positive if the learner has the capabilities to meet the challenges that are posed by the goal.

Apart from goal setting, time planning is another factor which is of crucial importance in self-regulated learning. Planning is about getting to the results or outcomes.

Planning of the learning programme means that learning is purposive as it entails activities and learning content to be exercised (Sibaya and Kruger 1998:183). Time management is a central element needed for effective learning to take place, and it aids the learners in developing time frames through which to monitor their performances.

Lack of time planning might cause anxiety. Doing things without reflection could pose difficulties for the learner to master the content of learning. Lack of this self-regulation would indicate that learners are not in control of their time schedules. It is thus very important for learners to develop a sense of time in their own learning. Time planning and management play a crucial role when learners take control of their own learning process. Taking a look at how other successful people manage their time could be a major motivating factor to learners.

2.3.5 Self-regulated learning and outcomes-based education

OBE is characterized by outcomes or results. In OBE there are two types of outcomes, namely, critical cross-field outcomes and specific outcomes (Van der Horst and Mc Donald 1997:49). Critical cross-field outcomes refer to the general outcomes in behaviour derived from a variety of learning areas. These outcomes lie the foundation for developing more specific outcomes. Critical cross-field outcomes are premeditated to make learners economically and socially conscious (Olivier 1998:17). Specific outcomes, on the other hand, are specific results that the learner has to achieve in a particular learning area over a certain period of time. Critical cross-field outcomes are long term and achievable over a long period of time. Specific outcomes are achievable within a short period of time (Spady and Schlebusch 1999:59).

The central assumption of OBE is that the curriculum should be learner centred. In OBE the assumption is that the learner should not only assimilate and reproduce

information received from the educator. The shift from the educator has salient implications for learner development. It inter alia implies that the learner will be able to be:

- creative in developing new ideas;
- aware of his environment and how it impacts on his learning;
- open to critical evaluation of information from reading, watching of television and from educators;
- assess his progress continuously in terms of goal achievement and personal development;
- exploring a variety of information in developing new ideas; and
- identifying new learning strategies for more effective learning (Tiley 1997:5).

From the previous discussions on self-regulated learning (cf para.2.2.3), it is becomes clear that for the successful practice of OBE, self-regulated learning by the learner is very important. The role that is played by the educator to instill self-regulatory strategies in learners is highly accentuated in OBE (Van der Horst and McDonald 1997:42).

2.4 OBSERVATIONAL LEARNING

According to Bandura (1977b:192), people learn vicariously by acquiring the cognitive representations of modelled behaviour. The behaviour modelled may be in the form of memory codes stored in the long-term memory. These memory codes might take the form of visual imagery or verbal propositional codes (Hamilton and

Ghatala 1994:291). Imagery codes are representations of mental pictures people make, while verbal codes involve listening to what other people say.

In this study the terms "observational learning" and "modelling" are used as representing or meaning the same thing, an approach which is also shared by Bandura (1977a:31). These two concepts are used in this study in preference of imitation. The concept *imitation* is not used, because of its limitations in the sense that imitation seems not to incorporate the cognitive aspect of the person (Pintrich and Schunk 1996:105).

Human beings learn to speak, use tools and behave appropriately in various social settings by looking at what other people do (Good and Brophy 1995:158). Through vicarious learning people learn not only to model others, but they also come to know the conditions that affect their achievements. Observational learning is a process by which people experience what others have experienced without going the same route, for example when reading magazines or listening to other people's stories. Behaviour, however, is demonstrated and observed in a variety of settings and under different conditions (Bandura 1977a:24).

The three types of modelling stimuli mentioned by Bandura (1977a:25) include the live model, the symbolic model and verbal descriptions or instructions. Live models are individuals the learner may interact with on a daily basis, like educators, parents, other family members and friends. Symbolic models are pictorial representations of behaviour, which are found in the mass media, for example in newspapers and magazines, over the radio or on the television. Verbal descriptions or instructions are words of encouragement by other people, or the comments which they make. Gredler (1992:310) comments that mass media supplants the role of direct personal experience in learning about the world. He warns of the danger of mass media as it portrays mostly non-real things. This non-reality is mostly found in commercial advertisements intended for profit making.

Through the process of self-experience and experience through observing others, Bandura (1977b:192) identified the following four elements in the social learning process: Attention, visual and verbal memories, translation of behaviour and motivation to carry out the modelled behaviour. These elements will be discussed in the following section.

2.5 ELEMENTS OF SOCIAL LEARNING

The following section is a discussion on four different elements of social learning.

2.5.1 Attention

In order to learn from observing other's behaviour, the observer must pay attention to and correctly perceive the modelled activity. Bandura (1977b:192) mentions that attention is influenced by the importance of the event that is observed. The internal state of the observer is also important. Schunk (1989:87) also believes that new behaviour cannot be learned or acquired unless the learner attends to and perceives the event under observation, to form new information.

Gredler (1992:318) postulates that the behaviour intended to change the learner should be relevant and uncomplicated. When the behaviour modelled is relevant, the learners would not be discouraged to repeat it many times until success of mastery is achieved. The attentional processes are influenced by the learner's observational skills, his arousal level, past performances and sensory capabilities. These are all sources of self-efficacy (Bandura 1977a:23). An educator can thus enhance the learners' attentional capabilities if he includes in his teaching various teaching aids.

2.5.2 Visual and verbal memory

Learning through modelling demands from the learner the capacity to retain the behaviour in words, as well as visually (Bandura1977b:197). In order to have lasting effect, the behaviour observed needs to be coded into the memory for later application. Bandura (1977a:179) emphasizes the importance of rehearsal of behaviour that was learned in order to provide the observer with a chance to enact the learned behaviour through imagery and motor practice.

In order to enhance retention, Schunk (1996:113) suggests that the learner should formulate a mental rehearsal to represent internally the events that are absent, which in turn will enable mastery of an activity. This means that learners should not wait for a long period to practise what has been taught in the class. Educators should also not wait for a long time to assess the learners' understanding of the work done. This would require the educator to outline the purpose of his lessons clearly. The outcomes of the lesson need to be clarified and the learner be informed about what he has to be able to do.

2.5.3 Translation of behaviour

Translation of observed behaviour is to reproduce the observed behaviour that was retained in the memory. According to Bandura (1977b:196), this process will depend on the learner's motor reproduction capabilities and motivation. Motor reproductions represent selected and organized responses at cognitive level. The motor reproduction is enhanced through practice (Bandura 1977a:180). Learners should be encouraged to translate what they have learned in class to their daily life situations (Tiley 1997:6).

2.5.4 Motivation

Motivation is an urge to achieve the goals that an individual wishes to achieve. Motivation to carry out the observed behaviour is, according to Bandura (1977a:29), influenced by what the individual feels is important to possess. Motivation is also attached to the rewards the individual anticipates getting. The processes that enhance motivation are called external reinforcement, vicarious reinforcement and self-reinforcement (Bandura 1977a:128). These three encourage the learner to expect improvement in performance. Behaviour is reinforced when the expectation of what is to be gained is important. The learner will then try to avoid behaviour that is not productive.

Vicarious reinforcement occurs when the learner is praised for enacting the performance of the modelled behaviour. When this is done honestly, the learner's level of motivation to enact the behaviour again would be reinforced. Self-reinforcement occurs when the individual rewards or punishes his own behaviour for different reasons. The rewards and punishments are influenced largely by performance. Below standard achievement is usually not rewarded while above average achievement is rewarded (Good and Brophy 1995:356).

2.5.5 Educational implications of the social cognitive learning theory

The social-cognitive theory demonstrates that modelling is not governed by a generalized disposition to emulate a model with particular qualities. Rather, individuals tend to select certain behaviour to emulate the particular models (Gredler 1992:333). The theory also recognizes the self-induced contingencies that motivate the behaviour of the learner to learn through self-regulatory processes.

The theory extends the learning process beyond direct contact with live models as it includes the situation in which children acquire information from sources other

than the family and the school, such as through mass media (Gredler 1992:333). The learner is helped to incorporate or integrate learning across learning areas as suggested in OBE (Department of Education 1997:17).

The self-efficacy theory will be described next.

2.6 THEORY OF SELF-EFFICACY

The following section deals with the theory underpinning self-efficacy and different approaches that can be utilized to enhance it.

2.6.1 Definition of self-efficacy

Self-efficacy is defined as the individual' s beliefs about his capabilities to organize and implement the actions necessary to attain the performances desired (Schunk 1994:84). Self-efficacy is henceforth regarded as an integrative theoretical framework to explain and predict psychological changes achieved by different modes of treatment (Bandura 1977a:preface). Self-efficacy is used to assess the individual's level of motivation to perform certain tasks. The individual's level of motivation is based on his sense of whether he would be able or not to perform the task. The individual who is unable to perform the stipulated tasks due to lack of coping, is given different treatments in the form of the four social cognitive learning processes cited in paragraph 2.4.

Perceived self-efficacy describes a cognitive mechanism presumed to underline the likelihood that the individual would be able to cope or not, given a certain task under certain circumstances (Bandura and Cervone 1983:1017). Perceived self-efficacy is based on the likelihood of the individual's conviction regarding his own effectiveness to try harder to win over the difficult situation. Bandura (1977:80) mentions that individuals fear and avoid situations in which they believe that they will

be unable to handle themselves, and at the same time they behave affirmatively when they believe that they are capable of handling the difficult situation successfully.

As such, self-efficacy is explained as the conviction that one can successfully organize and execute the behaviour required to produce a particular outcome (Bandura 1995:2). The concept of self-efficacy is applied to judge how well one can organize and implement effective strategies in a situation that may include novel, unpredictable and stressful elements (Bandura and Schunk 1981:587). For example, research done by Furnham, Ota, Tatsuro and Koyasu (2000:63) on cultural differences in the beliefs concerning the efficacy of cures for common psychological problems, showed that participants who demonstrated high levels of self-efficacy showed the will power to overcome self-indulgence (such as over-eating and excessive smoking), whereas those with no will power displayed a low sense of self-efficacy.

Bandura (1995:3) also believes that people who suffer from phobias can relearn their behaviour through vicarious process learning. As such, self-efficacy is not based on the person's ability or talent, but on what he believes he can do. Based on that self-belief, an individual strategizes as to how he organizes what needs to be accomplished. In the same way, lack of self-efficacy renders the individual fewer choices to strategize in order to achieve. Based on the self-belief that a particular action can be accomplished through self-regulation, an individual would be able to control what might impede the progress of learning.

According to the self-efficacy theory, the stronger the person's perceived self-efficacy, the more vigorous and persistent would be his efforts. On the other hand, an individual who entertains serious self-doubts about his capabilities will slacken efforts or give up altogether (Bandura, Reese and Adams 1982:5). Bandura (1977b:193) informs us that the best way to predict behaviour is to take into account

both efficacy and outcome expectations.

2.6.2 Self-efficacy versus outcome expectancy

An outcome expectancy is defined as a person's estimate that a given behaviour will lead to a certain outcome or outcomes. In other words, a learner may expect to pass if he studies very hard. An efficacy expectation is the conviction that one can successfully execute the behaviour required to produce the needed outcome (Bandura 1977b:193). This means that efficacy expectations go beyond outcome expectancy in that it encompasses the strategies the learner would implement when faced with uncertainties.

An inference that could be made, according to the self-efficacy theory, is that the individual should acquire a certain set of behaviours in order to master efficacy beliefs. The motor reproduction process of learning that is needed to model behaviour, plays a crucial role in order for an individual to gain confidence about what he would be doing in the attempt to reach a goal. The motor reproduction to enact the modelled behaviour requires repetitive exercises that would give the individual the opportunity to correct mistakes. Such repetition would ultimately lead to mastery of the performance.

It is a matter of fact that external factors or stimuli can impact on the individual learner, but the same can be said about the individual's capability to manipulate the environment. Hergerhann and Olson (1997:337) allude to the fact that if actions were determined by external rewards and punishment, people would behave like weathervanes, constantly shifting in different directions to conform to the momentary influences impinging upon them.

From the social cognitive learning theory, Zimmerman, Bandura and Martinez-Pons (1992:664) come to the assumption that external reinforcers and punishment yield

little on the individual's level of motivation to perform certain behaviour, as the behaviour is mostly self-regulated. As such, Bandura (1995:1) and McCombs and Marzano (1990:55) contend that there exists vast human power to lift up one's level of self-efficacy in order to master difficult tasks. Motivation is one such a factor that could make vast differences. Self-efficacy differs from situation to situation and from person to person.

The different dimensions of self-efficacy are discussed below.

2.6.3 Self-efficacy dimensions

Bandura (1977b:194) and Schunk (1990:63) refer to self-efficacy dimensions as magnitude, generality and strength. Magnitude pertains to the level of task difficulty. Some individuals are generally limited to simpler tasks and others can perform more complicated ones. By generality it is implied that experience gained through efficacy could be generalized to different situations. Strength of efficacy refers to the intensity of the expectation. The expectation can be either high or low. When the individual hold low expectations it is easy for the expectations to be put off, unlike when the individual has high expectations.

Self-efficacy is, according to Bandura (1995:35), acquired by means of any one combination of the following sources: performance accomplishments, vicarious experience, verbal persuasion and emotional arousal. (See figure 2.2, p. 43).

2.7 SOURCES OF SELF-EFFICACY

Expectations of self-efficacy are based on a number of different sources of information. Figure 2.2 presents the different influences used in the treatment to reduce defensive behaviour and the sources through which each treatment might operate to create expectations of mastery. The following are the different sources

of self-efficacy.

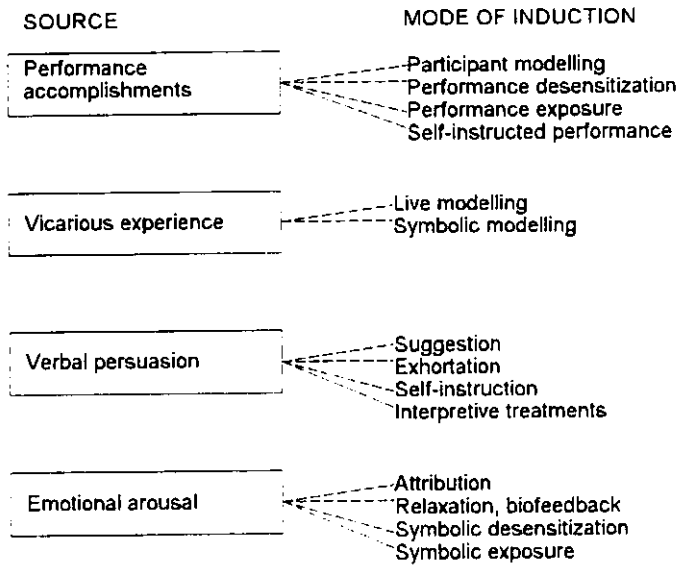
2.7.1 Performance accomplishment

Figure 2.2 implies that performance accomplishment is the ability to accomplish mastery of the modelled behaviour. In order to achieve mastery and success of the modelled behaviour, the learner who observed the behaviour needs to repeat the same performance through self-instruction. Self-instruction is the process of exercising the modelled behaviour independently. Such process indicates that the learner ultimately takes responsibility for the behaviour which he observed and mastered.

Performance accomplishment refers to the process whereby the person demonstrates the ability to observe and practise the modelled behaviour until the repeats of failures have been eliminated. This process is performed in an effort to ensure success and to achieve the desired outcome. Bandura (1977b:195) and Schunk (1990:75) mention that the sources of efficacy are influenced mostly by personal mastery experiences. The ability to succeed through persistence would raise mastery expectations and repeated failures would lower such expectations. Personal mastery experiences tend to create high expectations, which is the result of motivation and self-gratification.

Prior failure experiences tend to generate low expectations. Such failures result in negative emotions like inferiority, unhappiness and demotivation. Based on prior success, learners may tell themselves they have never failed a test and have acquired skills to re-enact the same process that will enable them to succeed. The knowledge that the person has achieved in the past usually arouses the level of motivation and efficacy in the person.

Figure 2.2. Efficacy sources



Source : Bandura (1977a:195)

On the other hand, a learner who is beset with self-doubt based on a lack of self-efficacy, tends to retrieve to a comfort-zone to reaffirm himself that success is hard to achieve or that he lacks the ability to achieve. Over a period the person acquires an escape mechanism which gives him a shelter of excuses and a sense of helplessness (Peterson, Maer and Seilgman 1993:3).

2.7.2 Vicarious experience

Bandura (1995:3) and Eastman and Marzillier (1984:22) describe vicarious experience or modelling as a motivation acquired by seeing others performing a task which was anticipated as difficult. The person who observes the modelled behaviour judges himself against what he can do based on the capabilities of the model who performs the task. The judgement refers to the success or the failure of the model to perform the task successfully. For example, if an individual failed to achieve an

outcome, it is important that he learns by observing others who perform the same task with success.

Success by vicarious experience can be achieved through adopting a positive attitude. A positive attitude implies the belief that success will be achieved despite the temporary failures. Such an attitude enhances the person's sense of efficacy, and over time, motivation will be regained and ultimately fear of failure will be eliminated.

Figure 2.2 refers to two kinds of modelling, that is live and symbolic modelling. Live models are people that are regarded highly by their observers. The models may be regarded highly because of their historic achievements. Symbolic models are people with whom observers are not in touch with, but feel passionate about. Symbolic models are often derived from reading books or watching them perform lively and on television.

The assumption that one is not good at mathematics or hate mathematics can be corrected through the correct appraisal of what the individual is capable of achieving. Although an individual could benefit positively by observing modelled behaviour, Bandura (1977a:55) warns of complacency. He also warns that watching the model fail repeatedly despite sustained efforts, will most likely lower the observer's level of efficacy to succeed if he perceives his capabilities as inferior to those of the model.

2.7.3 Verbal persuasion

Verbal persuasion is a strategy used to influence people by means of spoken words. Verbal persuasion is usually carried out to motivate or orientate people and raise their levels of expectations that outcomes can be achieved. Verbal persuasion is, according to Bandura (1977b:198), widely used because it is easy to do and always available.

People are often told that they could overcome situations they previously had difficulty with. Figure 2.2 indicates the different levels of persuasions, one being self-induced persuasion. Self-induced persuasion is seen as a powerful motivator because it is self-initiated (Bandura 1977a:82). The person who attribute failures and successes to ability, is unlikely to be verbally influenced. In order to achieve maximum success through verbal persuasion, McAuley (1991:383) advises that verbal persuasion must be kept within realistic boundaries of aptitude or talent. Telling the learner that it is possible within his ability to attain a certain goal while he is not capable of doing so, is not advisable. On the other hand, if the particular individual learner knows that it will be impossible to complete the particular task, then verbal persuasion will also be ineffectively rendered. It is therefore clear that learners' perceived capabilities play a crucial role in determining the attitude the learners will apply in approaching learning. It can also be deduced that in order to influence the learners to enjoy the attainment of more demanding tasks, the educators will have to change the learners' perceived attributions about their capabilities.

2.7.4 Emotional arousal

Bandura (1977b:198) describes emotional arousal as the feelings people experience. Figure 2.2 refers to the different attributions of arousal that might influence the individual's level of motivation for self-efficacy. Emotional arousals are based on physiological or emotional states. The physiological states refer to the levels of stresses and distresses the individual experiences.

Among the emotional distresses, mood swings are believed to influence how the person react to influences. Mood swings also influence how individuals are able to perform. A positive mood would likely enhance perceived self-efficacy, whereas despondent moods diminish it (Bandura 1995:4, Bandura; Reese and Adams 1982:5). The person who experiences hunger would in most certainty, be less

persuaded as his concentration is hindered to satisfy the basic needs of food. The person who is not in good health is also likely to suffer the same results, and his sense of efficacy is likely to be lower than the person who is in good health. The person who is sick will be influenced by his internal state of the mind and body and will be probably struggle to pay attention. Persuasion under these circumstances is very unlikely.

2.7.5 Collective efficacy

Self-efficacy not only plays a central role in the life of every individual, but affects groups as well (Selaledi 1999:69; Bandura 1995:34). The perceived sense of the group's ability to perform a task is generally referred to as collective self-efficacy. In order to achieve change within a group the members of that group must have a high sense of efficacy. According to the social cognitive theory, this means that when people are put together to achieve something, their commitment to achieve their intended goals is enhanced.

The families and youth of today are going through times of drastic technological and social change that presents opportunities and challenges, as well as constraints (Bandura 1995:35). People's beliefs in their efficacy play a paramount role in how well they organize, create and manage the circumstances that affect their life courses.

Many of the challenges of life centre around common problems that require people to work together to change their lives for the better. People's beliefs in their collective efficacy influence the type of social future they seek to achieve and how much effort they put into it. Their perceived self-efficacy also influences their endurance when collective efforts fail to produce quick results. The stronger they believe in their collective capabilities to affect social change, the more active they

engage in collective efforts to alter national policies and practices (Bandura 1993:140).

2.7.6 Microanalysis of self-efficacy

Microanalysis is used as a technique to describe the relationship between perceived self-efficacy and behavioural change (Bandura 1986:88). When using micro-analysis, the tasks which are to be completed, are arranged in hierarchical form. The tasks that the individual could do are limited to specific tasks in the order of the perceived ability to accomplish each task to attain maxim performance (Bandura *et al* 1982:9). In other words, the microanalysis technique can be regarded as a scale or an instrument for the measurement of self-efficacy. This scale should at all times take into consideration the different dimensions of self-efficacy. These dimensions, as promulgated by Bandura (1977b:205) and Eastman and Marzillier (1984:224), are the level, the strength and the generality of subjects' efficacy expectations.

Microanalysis allows for the measurement of intermediate levels of task performance rather than global levels. Microanalysis is thus perceived as a specific task construct rather than a global construct (Selaledi 1997:40). For each task designated, an individual indicates the degree of confidence or certainty that a particular task on a designed scale will be executed.

The level of self-efficacy is stated as the number of performance tasks judged with a value above 10. In this research study, the strength of self-efficacy for self-regulated learning is summed in each domain, which are LESO, LESJ and LESE. The respondents' replies to the questionnaire are added together to establish how much they scored in each domain. The total of each respondent in each one of the domains is then summed up to obtain the total score of each respondent (Bandura 1977b:205).

2.8 ATTRIBUTIONS

The reasons people ascribe to success and failures are called attributions. Weiner (1985:548) cites high intelligence, patience, effortfulness, weariness, low ability, low intelligence, social background, social status and locality as some of the explanations provided to explain why learners achieve differently academically. Pintrich and Schunk (1996:108) say that these explanations are similar to the causes of perceived self-efficacy which might not be true. Knowledge of past experiences with an encounter with a failure or success might influence the person to form perceptions of whether he is a good or not so good learner. Weiner (1985:549) mentions three dimensions central to the inferences people make about their successes and failures. Table 2.2 grouped them as the stability dimension, the locus dimension and the control dimension of academic attributions.

The stability dimension is about the stability and instability of a cause. Within this dimension, failure can be regarded as not fixed or stable and deficiencies that cause failure could be eliminated (Weiner 1985:550). The learner who applies a stability causal dimension can be advised to persevere and apply different learning strategies in order for him to pass. The fluidness of this dimension can help learners to recognize that doing bad in some learning areas does not make them redundant in other aspects of life. The locus dimension refers to causes that are classified as either internal or external to the learner.

According to table 2.2, the internal causes of failure or success are seen to be residing within the learner and the external causes are outside the learner. Learners with an internal focus of control will believe that their academic success depends on their own ability, skills and effort. Learners with an external focus of control will believe that their academic success depends on luck, easiness of assessments and their educators' abilities (Weiner 1985:550). Learners who have faith in themselves will have more control over their learning than learners who believe in external

factors.

The control dimension involves the perception of how much control a learner can possibly have over the variables (lack of self-regulatory skills for learning) that impact on his learning. Control dimension also refers to the causes which can be controlled and the causes that cannot be controlled. Pintrich and Schunk (1996:135) pronounce that attribution of success and failure to evitable causes, mostly exert influence upon emotions positively. This attribution is also said to enhance a high sense of responsibility, which in turn, fosters self-regulated learning. Learners who attribute their successes and failures to internal dimensions will have a higher sense of self-efficacy than those learners who attribute success and failure to external factors.

Table 2.2 Achievement attributions classified by locus, stability and controllability

Stability		Uncontrollable		External
Stable	Controllable, Long-term effort	Aptitude	Controllable Educator, favouritism requirements	Uncontrollable Ease-difficulty of learning area
Unstable	Skills/knowledge Temporary or situation effort	Health on the day of assessment Moods	Assistance/educator and parents or friends	Chance or luck

Source: Weiner (1985:540)

2.9 CONSTRUCTS RELATED TO SELF-EFFICACY

The following are constructs related to self-efficacy. They are self-intentionality or determinism, self-concept, intrinsic motivation and attributions.

2.9.1 Self-intentionality

Self-intentionality refers to the goal-directed plan by the individual to achieve the intended goal. Self-intentionality entails that the learner takes responsibility and control of his learning activities. In such a way the learner becomes actively involved in managing the learning process. Intentional learners use stimulating influences such as intentions to achieve, motivation, passions, personal principles and high standards to achieve challenging personal goals. Self-intentionality helps the learner to feel in charge of the situation.

Spaulding (1992:22) contends that learners who are forced to learn do not feel in charge of the learning situation. As such, external rewards are unlikely to motivate them. Self-intentional learners own their learning processes and are responsible for themselves. Such a feeling creates a feeling of autonomy over the circumstances of learning. Self-intentionality and self-efficacy are similar with regard to the individual's cognitive processes in that they both acknowledge the person's ability to self-regulate his behaviour.

2.9.2 Self-concept

Self-concept refers to an individual's perception of himself. According to Marsh (1993:60), the self-concept has an evaluative character. The learner assesses himself, based on his past achievement and his prediction of how he will perform in future events. The self-concept takes a look at the total evaluation of an individual.

Self-concept differs from situation to situation.

Marsh (1993:62) holds the view that the self-concept is multidimensional and hierarchical in nature. He perceives that a learner's self-concept may be divided into the academic and the non-academic self. The non-academic self-concept refers to how the person relates to situations other than academic ones. An academic self-concept, on the other hand, refers to a person's abilities to be academic competent and to achieve academically. The self-concept can be positive or negative. The self-concept is viewed as positive when the person rates himself highly on different aspects of his abilities and personality, and negative when self-rating is lower on those aspects of his ability and personality.

The link between self-concept and self-efficacy is that both are psychological constructs relating to self-perception. The states of both the self-concept and self-efficacy can be changed as they are not fixed, and with repeated training, behaviour modification could be achieved. The difference between the two is that self-concept deals with how one feels about oneself. This saying implies that self-concept is affective in nature (Raath and Jacobs 1993:9). Self-efficacy, on the other hand, deals with cognitive mediation about doing certain things.

2.9.3 Intrinsic motivation

When giving an explanation of motivation, it is important to allude to the assumptions of the attribution theory of motivation. The question may be asked why some learners are more motivated to achieve than others. Another similar question which may be posed, is why some learners are failing to complete certain tasks which others have few or no problems to finish. Spaulding (1992:29) believes that the answers to these differences lie in the predictability of the environment the learners find themselves in. He mentions that some situations contribute to making the learners feel incompetent, while other situations make them perceive themselves

as being competent.

When the learner experiences incompetency in a situation, he would quite likely feel that he has no control over the situation and this would be accompanied by feelings of stress and frustration. The same negative feelings are not attached to a learner who feels that he is in control of the situation. Intrinsic motivation emanates within the individual and it indicates a determination to succeed in the course undertaken. As such, intrinsic motivation becomes a source of inspiration to persevere in order to maintain the desired behaviour which is likely to lead to the achievement of a goal (Bandura 1977a:161).

Intrinsic motivation is more cognitive, and the individual tends to rely more on self-determination in order to achieve his own stipulated goals. Self-efficacy does recognize the importance of this cognitive contingency through the process of reciprocal determinism.

2.10 SELF-EFFICACY AND OUTCOMES-BASED EDUCATION

Technological advancement has put tremendous pressure on the disadvantaged learners in South African schools because they tend not to succeed in keeping up with development (Du Preez 1996:78). For example, many of the schools in so-called disadvantaged areas have no computer laboratories. In South Africa the challenge is to address the imbalances of the past era where education was unequal and racial. For the time being, OBE is seen as a curriculum mechanism to address such imbalances.

The most important aim of OBE is to deliver quality education. Through OBE, learners are expected to be proactive and critical. These two aspects of OBE (being proactive and critical) are seen as central to the self-regulatory systems of learners (Van der Horst and McDonald 1997:2). By being proactive and critical, it is

envisaged that learners will engage in self-reflective processes that will monitor their academic work (Van der Horst and McDonald 1997:6; Kruger 1998:110). It is possible that self-reflection would indicate the manifestation of high self-efficacy for both learners and educators, as suggested by Bandura and Cervone (1983:1018), as well as Schunk (1990:73).

OBE practices are aimed at bringing about a paradigm shift for both learners and educators. The challenges it brings along may be seen as a struggle for learners' and educators' beliefs in making it work. However, the aims of OBE also imply an embracing of the self-efficacy theory which will help to enhance the educators and learners' willingness to work towards a common understanding of how educational goals should be achieved.

As self-efficacy includes the cognitive processes in the form of the self-regulatory system, the individual (both the learner and the educator) would have to give feedback on his cognitive processes as he engages in the workings of OBE. He will have to reflect in relation to the environment and himself to determine the behavioural outcomes needed (Van der Horst and McDonald 1997:7).

Self-efficacy as a theory should be seen as important to predict behavioural actions that determine outcomes in educational settings. Therefore it links directly with OBE practices.

2.11 CHAPTER CONCLUSION

Chapter two examined the concept of self-efficacy, and in so doing, expounded on the different schools of learning. Observational learning was explained under social cognitive learning and its sub-processes. Motivational factors for self-reinforcement under self-regulatory learning were touched upon, as well as the dimensional aspects related to them. The theory of efficacy was dilated on and sources related

to it were highlighted. Efficacy for collective endeavouring, as well as the micro technique of efficacy was put into focus.

Chapter three is devoted to a discussion of the quantitative research methods of data collection to be used in the study. The focus will be on the data collection as to support or nullify the stated hypotheses.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The essence of this research was earlier set out in chapter one as to explore the phenomenon of high failure rates among grade twelve learners in South Africa. The literature review in chapter two indicated the framework to be used for the empirical research. For this chapter, it is largely devoted to theoretical description of the design, the methodological procedures and the strategies implemented this research study. Following is a discussion of the procedures regarding methodology and testing to be employed.

3.2 RESEARCH DESIGN

A research design is a strategic framework or plan that serves as guideline for research activity to ensure that sound conclusions are reached. It can also be regarded as a plan to test the hypothesis formulated (Bless and Higson-Smith 1995:63).

In formulating a research design, it is of paramount importance to identify and assimilate components and methods in such a way that validity of the results is maximized (Mouton and Marais 1990:39). Due to the fact that the design leads to the identification of a sequence of events (these are the methods), some researchers describe designs as "architectural blueprints" (Bickman and Rog 1998:146).

In this study a causal-comparative research design is utilized. In causal-comparative research, the researcher does not manipulate conditions affecting the

subjects. He systematically observes the conditions. Causal-comparative or *ex post facto* means "after the fact" (Ary *et al.* 1990:379). The purpose of *ex post facto* research is to investigate whether pre-existing conditions have possibly caused subsequent differences in the subject. In other words, the researcher looks at conditions that have already occurred and collects data to investigate the relationship of these conditions to what leads to subsequent change in behaviour (Terre' Blanche and Durrheim 1999:40).

The researcher attempts to determine whether differences between subjects have resulted in differences in the dependent variable. The *ex post facto* research is aimed at providing causal explanations of phenomena. In this study the aim is to contribute to and amplify the existing body of knowledge as regards grade twelve learners' high failure rates at secondary schools in South Africa.

3.3 POPULATION AND SAMPLING

In the following section, the population and the sampling of this research study are reviewed.

3.3.1 Population

A population is defined as the entire collection of events in which the researcher is interested (Howell 1995:6). Allison, Sullivan, Owen, Rice, Rothwell and Saunders (1996:241) refer to this collection of events as comprising real or hypothetical set of people or classes, objects and events to which the researcher wishes to generalize the results of his study.

The population should have common characteristics (Borg and Gall 1989:216). There are two types of population groups, namely target population and accessible population. The target population refers to all the individuals, events or objects in

which the researcher is interested and to which the results of the study are applied. The accessible population refers to all the individuals, events or objects that may be accessible to or within reach of the researcher (Houser 1998:98). In this case, the study population consisted of grade twelve learners which were within reach of the researcher, namely learners who are based in Mangaung and Thabong in the Free State province and are either achieving high marks in grade twelve examinations or failing grade twelve examinations.

Financial constraints and time, affected the researcher not to reach the entire target population.

3.3.2 Sampling and sampling technique

Sampling is a technical accounting device to rationalize the collection of information, and to choose in an appropriate way the restricted set of objects, persons and events from which the actual information will be drawn (Mitchell and Jolley 1992:473).

Sampling constitutes of abandoning certainty in favour of probability. This view is favoured because a large part of the population has not been investigated. Statements attained from the sample necessitate probability statements. The research statements arrived at are said to be tentative. Bless and Higson-Smith (1995:86) identified the following advantages of sampling in favour of whole data gathering:

- data through sampling costs less;
- data through sampling is less time consuming;
- damage can be avoided, if something goes wrong, especially if it involves

object mortality; and

- sampling becomes practical if the population is very large.

The process of sampling involves gaining a representative sample. A representative sample is the one that constitutes the properties of the general population. In order to arrive at representative sampling one has to ensure a complete and correct sampling frame. Sampling frame is described by Vockell (1983:103) as a way of picking a subgroup from a larger group and then use the subgroup as a basis for making judgements about the larger group. For example, it would be incorrect to sample only learners from the high or low performing schools or learners who are exposed and have an access to resources in abundance to those who are less exposed or have little resources.

Sampling theory distinguishes between probability or random sampling and non-probability sampling (Black 1999:116; McMillan and Schumacher 1997:164). Probability or random sampling assumes that elements of the population can be determined. Through probability sampling every subject have the same number of chances to be selected in the study (Johnson 1994:97).

This study used non-probability sampling. Non-probability sampling involves using whatever subjects are available for the purpose of research (McMillan and Schumacher 1997:162-163). Non-probability sampling can further be divided into:

- accidental sampling: This refers to one group of people at a particular place. For example, such sampling procedure could include university students at the cafeteria at lunch time. This kind of sampling will, however, exclude many students who happen not to be at the cafeteria at the time of sampling;

- quota sampling: This refers to sampling of a particular group of people who

happen to display similar characteristics at a certain place. An example of this sampling could be the lecturing staff at university and this will include both male and females lecturers across the racial line; and

- purposive sampling: This refers to sampling of a group because it is believed that the group meets the desired criteria or the group is the only one that is available. An example of purposive sampling could be the selection of only post-graduates students in the Education Department at a particular university who are employed.

This research study used purposive or judgemental sampling. Purposive or judgemental sampling relies on the judgement of the researcher regarding the characteristics of the representative sample. The sample is chosen on the basis of what the researcher regards an average person to be (McMillan and Schumacher 1997:771). In this study the average person was considered to be a grade twelve learner, either male or female, attending a secondary school in the Mangaung and Thabong areas.

Black (1999:115) warns of the dangers inherent in judgemental sampling. Some of the risks inherent in this method of sampling include the researcher's reliance on his subjective consideration rather than on scientific data. Furthermore, isolated members of the population are not included. Such population members possibly could have cast more light on the research investigation.

3.3.3 Reasons for choosing purposive or judgemental sampling

The sample was chosen based on the distinctiveness of the schooling found in South Africa. The distinctiveness could be ascribed to the complexity of school classifications along racial lines. In South Africa schools are classified into the following categories:; Black or African schools, Asian schools, White schools, mixed

school and religious schools (McGurk 1990:5; McKay and Romm 1992:112). The compartmentalization of schools does not only denote racial discrimination, but it is also influenced by factors such as:

- Locality of the school: Distance plays a crucial role in determining which school to attend. Some schools are closer to a specific neighbourhood than others.

- Language preferences: Different methods of instruction are chosen by different people. Examples of such languages in South Africa are Afrikaans, English (first language) and English (second language) and Black (African) languages.

- History of the school: Some schools emanated as a result of religious persuasions. Among these, the following can be distinguished: Christian (Catholic and Anglican) schools and Islamic schools.

- Affordability of the school: Some schools are more expensive to attend than the others and this implies that parents with low income earning would send their children to the schools that are less costly, while high income earning parents would probably send their children to the more expensive schools.

Purposive sampling was thus seen as compatible with the criteria the researcher determined. In this case, the criteria were set as schools that had grade twelve pass rates of below forty percent and schools with grade twelve pass rates above seventy percent during the period from 1997 to 2000. The sample was also determined according to the similarities that they shared. Some of these similarities are: the schools are found in peri-urban areas, they are affordable to an average parent, they teach in English as the second language and they teach the same curriculum.

3.3.4 Sampling size

Black (1999:116) identifies the advantage and disadvantage of sampling size as inherent in the largeness or smallness of the sample. A large sample is representative but has higher cost implications than a small sample which is more convenient. The criterion the researcher used on deciding on the sample size was the number of learners in grade twelve at each sampled school.

There were 150 learners from each group of schools selected, thus arriving at a sample total of 300 grade twelve learners. There were 75 boys and 75 girls from sampled schools A (performance below forty percent) and 75 boys and 75 girls (performance above seventy percent) sampled from schools B.

The equal numbers above were attained through distributing questionnaires proportionally or equally in the classrooms.

3.4 DATA COLLECTION

In order to conduct research which will provide accurate and reliable understanding of human behaviour, the systematic procedures in data gathering are essential. Observation, interviews, questionnaires, psychological tests and literature reviews are some of the techniques utilized to gather data (Bless and Higson-Smith 1995:64).

Data collected for the purpose of this research was done by means of questionnaires. Data collected through questionnaires come into two kinds namely: measurement or quantitative data and categorical data. Measurement or quantitative data refers to data that can be measured using interval or ratio scales (Bryman and Cramer 1990:6). These scales involve the degree of intensity, magnitude and strength of the respondent's belief or attitude (Black 1999:189). The

level of significance to accept or reject a hypothesis is established either at 0.5, 0.25 and 0.1.

Categorical or qualitative data deals with differences of responses from the respondents. Data collected in this manner only indicates percentages of differences. Say for example the researcher found that sample A indicated a difference of 30 percent more than sample B in this study. It is difficult to find the degree of intensity or magnitude as the acceptable level of significance is not established.

In this study, data collected is classified under both quantitative data and categorical data.

The procedures employed during the development of a questionnaire is outlined below.

3.4.1 Outline of a questionnaire

A questionnaire may be defined as a group of questions in writing to obtain information from respondents (Vogt 1993:279). A questionnaire usually consists of measurement scales, open-ended items for qualitative responses and other questions that elicit demographic information from the respondents (Terre' Blance and Durrheim 1999:293).

In this study, the questionnaire used consists of an interval scale, which will be discussed later in the chapter (cf par. 3.4.5), and is composed of closed-ended questions only.

3.4.2 Compiling a questionnaire

When compiling the questionnaire, the researcher isolated and eliminated elements that did not meet with the objectives of the study. This elimination provided the researcher an opportunity to clarify the objectives of the study. Items that satisfied the objectives of the study were pulled together and questions were formulated out of them.

The researcher took care that questions posed were understandable and clear. In order to avoid any misunderstanding on the side of the respondent, pre-testing and refining of the questions were undertaken, and are explained later in chapter four (cf par.4.2.3.2).

In order to obtain complete data and unspoiled responses, the researcher engaged in an activity of direct contact with learners. Van Damen (1990:153) maintains that through direct contact the researcher is able to explain the purpose and significance of the study to the respondents and clarify points that need further explanation. If deemed necessary, the researcher would be in a position to answer any questions that need further clarification. Through direct contact with the respondents, the researcher is also in a position to motivate respondents to answer questions carefully and honestly.

3.4.3 Types of questionnaires used

Foddy (1993:126) identifies open-ended and closed-ended questionnaires. The nature of these two types of questionnaires are discussed briefly.

Open-ended questionnaires leave the researcher the opportunity to categorize data obtained from the respondents. It is also possible to get additional information about the matter in question, because the respondents are in a position to add more

information than was initially anticipated by the researcher. Furthermore, open-ended questionnaires make it possible to percentile the data obtained, which means that the scores obtained by the respondents, are categorized according to percentages.

Open-ended questionnaires furnishes the researcher with a range of alternative answers. The respondents are allowed to give a variety of responses to one question posed by the researcher. Also, respondents are given a chance to supply their own responses, because their opinions are not restricted by the questions posed by the researcher.

Closed-ended questionnaires, on the other hand, channel the respondents' answers and as such their personal perspectives is limited. There is also a monotony of answers, because the subjects' answers can be compared as they relate to the same questions answered. One advantage of the closed-ended questionnaire is that its data is easy to analyse, categorise and can be computerized.

When writing down items of the questionnaire, it was done in compliance with the purpose of the research. Furthermore, questionnaire statements were formulated in a concise manner. The instructions to the questionnaire were made clear to respondents as to what was needed (Aronson, Ellsworth, Carlsmith and Gonzales:1990:246).

3.4.4 The format of the questionnaire

Peterson (2000:5) and Kruger (1998:4) suggest that the format of the questionnaire should entail some of the following characteristics:

- more space in the layout of the questionnaire, which entails less congestion or overlapping of items;

- the questionnaire outlook should elicit attraction;
- the questions should be precise and straightforward;
- the choice of the respondent should be clear and confusion as to what is needed should be at all costs avoided; and
- guarantee for anonymity of respondents is necessary.

All of the above-mentioned characteristics were adhered to in the development of the questionnaire for this research study.

The questionnaire, for the purpose of this research, was divided into five sections (see Appendix A).

Section A deals with the instructions for completing the questionnaire. This is an important element of the questionnaire as it prepares the respondents (learners) about what they should do. Among other items of instructions in the questionnaire, the following are singled out: the purpose of the research, the importance of the research, anonymity of learners and thanking participants in advance for their participation.

Section B involves biographical data. Peterson (2000:83) defines biographical data as factual information about the participant's background. Items asked under factual information usually consists of gender, education, age, ethnicity and locality. For the purpose of this study, the demographic variables included school category, gender and grade.

Sections C, D and E entail the three dimensions of self-regulated learning. These dimensions are named *learner efficacy for self-observation*, *learner efficacy for self-*

judged processes and *learner efficacy for self-response*. Each dimension was loaded with ten, fifteen and fifteen items respectively.

3.4.5 Scales of measurement

Scales of measurement are a set of numerical values assigned to subjects, objects or behaviours for the purpose of quantifying and measuring qualities (Ary *et al* 1990:223). Scales are used to measure attitudes, values and other characteristics the subjects might possess. Scales, unlike tests, do not indicate failure or success, strength or weakness, but rather the degree to which a subject possesses the characteristic of interest (Imenda and Muyangwa 2000:144; Saslow 1982:32; Roscoe 1975:15). Attitude scales measure an individual's attitude toward an attitudinal object, which may be another individual, a certain group of people or the school.

The attitudinal subject of this research study is *self-efficacy for self-regulated learning*. Borg and Gall (1989:311) highlight the following components of an attitude:

- an affective component that reflects the individual's feelings about the attitudinal object;
- a cognitive component that reflects an individual's beliefs or knowledge about the attitudinal object; and
- a behavioural component that reflects the individual's predisposition to act towards the attitudinal object.

Black (1999:189) identifies the following most commonly used scales, namely:

- Nominal scales - These are scales that assign labels to objects, events and participants in the research, for example, numbers assigned to a building around the campus will be labelled B14.

- Ordinal scales - Scales that order participants along some continuum, are called ordinal scales. For example, runners in a marathon are assigned positions of number one, two, etcetera, according to their positions in the race.

- Interval scales - These scales have equal intervals that represent equal differences. For example, a runner who finishes the race first in 14 minutes for the five kilometer race is 10 seconds faster than a runner who finishes the same race in 14 minutes and ten seconds.

For the purpose of this study the interval scale was used. The interval scale has equal intervals between the units of measure (Foddy 1993:171). On the other hand, for the nominal scale a score of 40 can be regarded as half-way between the scores of 30 and 50 points. The advantage of the nominal scale is that it can process arithmetic operations of addition, subtraction, multiplication and division. Through arithmetic operations, the mean, standard deviations, frequencies and level of significance are established.

In this research, the mean, standard deviation and level of significance for the purpose of hypothesis rejection or acceptance are utilized. In order to establish the level of significance, a t-test for two means was employed at 0.5 level of significance.

The degree to which self-efficacy for self-regulated learning could be applied, was achieved by asking the respondents to rate themselves on each item provided on a four point scale. The degree of agreement varied from strongly disagree (SD) (1)

to strongly agree (SA) (4). The higher the value of the respondent on the scale, the higher the sense of efficacy that was revealed.

3.5 PROCEDURES FOR ANALYZING DATA

For the purpose of this research, data was analyzed quantitatively.

3.5.1 Techniques used for data analysis

Data collected should reflect quality and high scientific standards. The following principles were followed in the analysis of data and interpretation: The data collected was analyzed using the descriptive and inferential statistics. Descriptive statistics aim to describe a set of data, in that way it entails reporting about the outcome of the instrument measurement. A good example will be the reading of pulse rate of a fit athlete that would differ from an unfit athlete. The reading of the two differences would entail reporting or describing the findings. Inferential statistics aim at making inferences or statements about the sample to a broader population. Inferences are tentative statements that point to the fact that findings are not absolute. Data obtained by means of the above approaches was categorised for the purpose of analysis in the following ways:

- data was systematized and made understandable;
- data was continuously summarized;
- data was divided into tables for better understanding;
- the headings used in the questionnaire were used in the analysis of data;
- the various differences in mean and standard deviations were tabled; and

- the findings, recommendations and conclusions were discussed in chapter five.

To have a better understanding of the results of the study, the relationships between the research variables were established through the level of significance. In order to arrive at an understanding of the level of significance, it is important to elucidate the difference between the research hypothesis and the null hypothesis. A hypothesis is defined as a tentative proposition suggested as a solution to a problem. The hypothesis presents a statement of the investigator's expectations of the expected relationship between two or more research variables in a problem (Roberts and Russo 1995:5). The researcher then collects evidence related to the hypothesis and examines the evidence to decide whether to reject or retain the hypothesis.

The research hypothesis is a statement about the relationship one expects to find between variables once the research has been completed. McMillan and Schumacher (1997:340) differentiated between directional and non-directional research hypotheses. Directional hypothesis specifies the nature of the relationship or difference that is predicted. For this study, the directional hypothesis could be: "Learners at schools which perform well have higher levels of self-efficacy for self-regulated learning than learners at low performing schools".

The researcher adopting this approach (directional hypothesis), expects that learners at high performing schools will display higher levels of self-efficacy than learners at low achieving schools. On the other hand, the non-directional hypothesis only states that there is a relationship or difference, but without specifying the nature of the expected relationship or difference. A hypothesis framed in the latter way may read as follows: "There is a difference between learners from high and low performing schools with regard to self-efficacy". This hypothesis states that there is a relationship existing, but supplies no indication of the nature of the relationship.

This study employed the directional research hypothesis.

Another type of hypothesis is a null hypothesis. The null hypothesis states that there will be no relationship between the research variables. Thus, a null hypothesis negates what the researcher expects or predicts. For example, if the research hypothesis predicts that learners from secondary schools in the peri-urban areas of the Free State province do not have the same attitude towards learning, a null hypothesis may be stated as follows: "There is no difference among learners from secondary schools in the peri-urban areas of the Free State province with regard to attitude towards learning".

3.5.2 Level of significance

All scientific conclusions are said to be statements of high probability, rather than statements of conclusive reality. The level of significance is a parameter for deciding and making statements whether there is a relationship among variables or not. The level of significance is also known as an *alpha level*. Borg and Gall (1989:352) emphasize that the researcher should beforehand establish the level of significance. The level of significance is set according to the type error the study wants to avoid. There are several ways of establishing the level of significance, being at 5% (0.05) or at 1% (0.01). The meaning inherent in using 5% significance level is that when null hypothesis is rejected on this level, the possibility still exists that the null hypothesis is true. It is, however, unlikely to be true, as there is at most 5% chance of it being true. The *alpha* set at 1% gives the researcher ninety nine chances in 100 that if he decides to reject the null hypothesis, that he will be correct (Slavin 1984:8).

If the research hypothesis is rejected when the data indicates that the probability of the null hypothesis being true, is equal or less than the predetermined acceptable *alpha* level, the results are then declared to be statistically significant. However,

when the probability is greater than the predetermined acceptable level, the results are considered as non-significant. In such an instance the null hypothesis is retained.

Tuckman (1994:241) warns about errors in using inferential statistics. He refers to two such errors, namely type 1 error and type 2 error. Type 1 error occurs when the researcher mistakenly rejects the null hypothesis, when it is in fact true. A type 1 error happens when a relationship does not exist, but the study analysis professes that it does. To avoid the occurrence of type 1 error, Henkel (1976:44) advises that the *alpha* be set at 5% when dealing with a smaller sample.

A type 2 error occurs when the researcher retains a false null hypothesis when he should have rejected it. A type 2 error takes place when there is a relationship among study variables, but the researcher's analysis of data fails to indicate that it does exist. To avoid the occurrence of type 2 error, McMillan and Schumacher (1997:350) suggest that the *alpha* set at 10% is better suited with a larger sample and reliable measures.

For the purpose of this study the *alpha* was set at 5% in order to reject the research hypothesis.

3.6 CHAPTER CONCLUSION

In chapter three the following were explained: research design, population and sampling, data collection, questionnaire development and procedures for analyzing data.

Chapter four presents a discussion on data collection techniques implemented and how data was analyzed. An explanation of the development and administering of the LSSLS forms the first part of the chapter, while the descriptive statistics, the

factorial design and the inferential statistics are analyzed in the rest of the chapter. The measures of central tendency, statistical analysis and analysis of variance are concluded by a deliberation on the outcomes as regards hypotheses.

CHAPTER 4

DATA COLLECTION TECHNIQUES AND DATA ANALYSIS STRATEGIES

4.1 INTRODUCTION

The research investigation into learner self-efficacy for self-regulated learning was conducted in order to acquire information in this regard from grade twelve learners. The learners came from two categories, namely those with performance levels below forty percent and those with performance levels above seventy percent in their final examinations. To achieve this aim, a Learners' Self-efficacy for Self-regulated Learning Scale (LSSLS) was designed and developed.

4.2 DEVELOPING AND ADMINISTERING THE LSSLS

The following section supplies an overview of how the LSSLS for this research study was developed and administered.

4.2.1 The development of the LSSLS

In line of development of an instrument of measurement, Oosterhof (1990:108) and Selaledi (1997:73) advise that the construct or domain to be measured should be clear and definable. The instrument developed should have a general purpose and its scope should present the format of the test items. Vierra and Pollock (1988:34) add that a pool of items selected should test and fall within the framework of the theory and literature review consulted.

The LSSLS was consistent with the above-mentioned suggestions. A pool of items were drawn from the literature review on the theory of self-efficacy and self-regulated learning.

4.2.2 Distribution and collection of the LSSLS

Permission for visiting the chosen schools was sought from and granted by the Director of Planning and Research of the Free State Department of Education (see Appendix B and Appendix E). This is in line with regulations of the Department of Education pertaining research conducted at public schools.

Permission was also granted by respective school managers (Appendix D) and by parents (Appendix E). In all instances, the purpose and objectives of the research were outlined.

Consistent with the outlines of the policy of the Department of Education regarding research at schools, the learners were requested to complete the questionnaires at home. This was done to avoid any possible inconveniences that could have been created to the learners and educators during school hours. The completed questionnaires were collected personally by the researcher after a period of five working days.

4.2.3 Validity and reliability of the LSSLS

Before the questionnaire was distributed, a number of steps were taken in order to ensure validity and reliability.

In order to start the development of the questionnaire, a number of local schools were visited. During such visits educators were asked questions pertaining their methods of instruction and facilitation skills, the learning skills of the learners and the time available for each learning session. Other aspects which educators were questioned about involved the number of free sessions per week per class, the number of after school study sessions offered to learners and the frequency of class disruptions. These questions were asked to find out more about the conditions of

learning in the schools and to establish whether self-regulated learning was functionally observable.

After compiling the questionnaire and before presenting it to the respondents, it was exposed to a pilot study in order to ascertain the validity, as well as the reliability of its content. Henerson, Morris and Fitz-Gibbon (1987:133) refer to validity and reliability of a research instrument as the amount of faith people have in an instrument for aspects of credibility.

Judgements of validity would answer the question whether the instrument is an appropriate one for whatever needs to be measured. It is of paramount importance to find validity for the appropriateness of the instrument. Evidence for validity can be found by establishing how much the instrument can detect of something about the subject being tested (Henerson, Morris and Fitz-Gibbon 1987:134). In line with this, McMillan and Schumacher (1997:178) refer to instrument validity as the extent to which inferences and uses made on the basis of the scores from an instrument are reasonable and appropriate.

Validity could apply for a particular situation only. This implies that results of any measure may be valid in one situation, but invalid in another situation (Black 1999:298). In order to establish whether the LSSLS was valid in situations other than the particular one it is intended for, the preliminary questionnaire was given to educators in Life Orientation, Learning area Facilitators (LF's) from the Department of Education and honours students in the psychology department at Vista University, Welkom Campus. This was done in an effort to assess whether the instrument included any irrelevant items. The researcher is of the opinion that the questionnaire met the requirements of validity.

Reliability of research instruments refers to the consistency of measurement over time. This would imply that the results obtained by means of an instrument should

be similar in different situations of data collection (McMillan and Schumacher 1997:178). Reliability assumes that results of the instruments should be stable over time. The reason behind developing test reliability is to minimize the influence of chance or the influence of any other variables unrelated to the intent of the measure on the scores.

4.3 DATA ANALYSIS STRATEGIES

Data analysis strategies refer to the techniques implemented to analyse the data gathered through the questionnaires. The purpose of data analysis is to support or contradict the hypotheses being tested or the research questions stipulated (cf par.1.8). Data collected is presented, described and interpreted. The chapter is divided into two sections. The first section deals with the descriptive statistics which describe measures of central tendencies. These measures deal with, amongst others, the percentage, mean and standard deviation. These measures evaluate how each of the subjects has scored against one another. The distribution of scores across the board is presented.

Furthermore, descriptive statistics also describes the data cleansing procedures that precedes the analysis phase. Factorial analysis is also included under descriptive statistics and tries to group or cluster variables which correlate highly amongst themselves. For the Learners' Self-efficacy for Self-regulated Learning Scale (LSSLS), clustering of variables are divided into three dimensions. These dimensions are referred to as LESO, LESJ and LESE.

The LESO (Learners' Efficacy for Self-evaluation) dimension consists of statements that tapped the learners' behaviour in order to assess their ability to meet their self-stipulated goals. The LESJ (Learners' Efficacy for Self-judgement) dimension drawn on the learners' ability to evaluate the standards they set against the importance of the task or its relevancy. The LESE (Learners' Efficacy for Self-evaluation)

dimension tapped on the how positive or negative learners are about their progress towards their goal attainment.

In this chapter mention is also made of inferential statistics. Inferential statistics measure the extent to which people differ from one another. In inferential statistics inferences are made on the scores of the population tested and how it could be extrapolated across the general population. Therefore, inferential results are the statements that researchers make about the findings of their studies on the sampled population.

4.4 DESCRIPTIVE STATISTICS

The characteristics of the sampled groups are coded in the form of demographics. The demographics deal with the status of the sampled subjects, which might, for example, include gender level of education. The demographics of the subjects form part of the first page of the questionnaire.

The sampled population of 300 learners were taken from four schools in two major peri-urban areas in the Free State province, namely Mangaung in Bloemfontein and Thabong in Welkom. These four schools were further divided into two groups, namely schools which are high performing (A) and schools which are low performing (B). The 300 learners were grouped into two equal samples (high and low performing schools) with 150 subjects each. These samples were further divided into 75 each on the basis of gender and grades to find the level of interaction. There were hundred percent responses and there was no raw data errors. Raw data errors are the mistakes the respondent commits in the form of not giving enough information about himself or leaving some questions unanswered (McMillan and Schumacher 1997:186).

Frequency data were also looked into, like for example, the average mark or the percentage, mean and standard deviation. An average mark is a calculated mark obtained by adding up all the individual marks or scores and dividing the total by the number of questions asked. The mean is the sum of the scores of all the respondents divided by the number of respondents and standard deviation is the score of the respondents that informs us how the scores are spread out (Howell 1995:51).

After the means and standard deviations were calculated with regard to the total sample, the data was subjected to factorial analysis. Factorial analysis was used to identify a number of factors or domains that can be used to represent the relationship among sets of interrelated variables (Terre' Blanche and Durrheim 1999:362). Through factorial analysis variables are then grouped into a cluster of factors. The validity and consistency of an attribute or factor are examined in order to establish whether such attribute does indeed deserve to form part of or fall under a particular dimension or cluster.

4.5 FACTORIAL DESIGN

In this study, gender and grades serve as independent variables for the purpose of two-way factorial analysis. Two-way factorial design is the label given to the number of factors involved in the study (Howell 1995:322). It implies that the independent variables, gender and grades, are paired with every level of every factor, in this case LESO, LESJ and LESE. Table 1 and 2 illustrate the two-way factorial analysis of the two samples of this study (high performing and low performing schools). According to Howell (1995:322), two-way factorial analysis has the advantage of greater generalizability of the results, as two means are compared against each other to find the level of variance.

Factorial analysis also serves the purpose of looking at the level of interaction

among the factors. For example, the study could ask whether the level self-efficacy for self-regulated learning has any effect on grades or gender for both of the two samples studied. There would be interaction if the if males demonstrated much greater or smaller differences across the three dimensions studied.

Factorial analysis, as explained in paragraph 4.4, deals with the validity and consistencies of the pool of items loaded in one cluster. Factorial analysis formed an integral part of the instrument testing process. Nunnally (1978:375) suggests that, like the usefulness of factorial analysis on the one hand, the hypotheses generated in this study, on the other hand, emanated from the pool of items that formed the three dimensions of the study scale. The questionnaire developed consisted of forty different items scattered along the three dimensions or factors which are characteristics of self-regulated learning efficacy. The questionnaire included questions pertaining to the extent to which the learners could exercise their sense of efficacy to self-regulate their learning routines.

A summary of the results obtained from the questionnaire are displayed in two tables, namely tables 4.1 and 4.2. (refer to pp. 80,81). In these tables the responses to each of the forty statements or questions are reflected. The responses were scored from one (1) to four (4). The total sum of the mean scores, standard deviations and the percentages are also supplied later in this chapter. The total of each of the three critical dimensions were determined, as well as the average for each independent variable (gender and grade) for each dimension. The three critical factors in the research could be summarised as:

- Dimension one: self-observation (this factor consisted of ten items);

- Dimension two: self-judged processes (this factor consisted of fifteen items); and

- Dimension three: self-evaluation (this factor consisted of fifteen items).

The dimension LESO was related to the goal the learner had set for himself, based on the theory that if the goal is important to the learner, the learner will expand more time and concentration in order to reach the set goal. This factor was labelled the Learner Efficacy for Self-observation (LESO). This dimension concentrated on the critical elements that are based on the learners' observation with regard to their set goals for attainment. For example, the learners were asked how often they observe their own progress in relation with their set goals. The LESO scale included ten items in total.

The second dimension was labelled Learner Efficacy for Self-Judgement (LESJ) and it tapped information from the area of the learners' level of self-satisfaction with their performance and their perceived self-efficacy with regard to reaching various levels of attainment. This dimension concentrated primarily on the deliberateness of the learners to pay attention to certain aspects of their behaviour and how that attention informs and motivates them. The LESJ scale contained fifteen items in total.

The last dimension studied, dealt with self-response. Questions which were asked focussed on the learners' anticipation of satisfaction of goal attainment. For example, the learners were questioned whether they do or do not compare themselves with their peers regarding achievement The LESE contained fifteen items in total.

The statistical analysis of this study focussed on the above three core dimensions of efficacy for self-regulated learning. These dimensions were covered by fourty items from the efficacy scale for self-regulated learning. Table 4.1 presents the means and standard deviations of the total scores of LESO, LESJ and LESE for high performing schools for gender and grades. Table 4.2 presents the means and standard deviations of the total scores of LESO, LESJ and LESE for under-

performing schools for gender and grades.

4.6 INFERENTIAL STATISTICS

The second part of the research statistics deals with the inferential statistics. Inferential statistics is concerned with the inferences or extrapolations made from the research sample to a larger population. The study used the two-way ANOVA, which is the analysis of the study variables.

The results of the ANOVA, as calculated by means of a scientific calculator to determine statistically significant differences among the sampled subjects of the four schools that were divided into two groups of high-achieving and under-achieving schools, are presented.

4.6.1 Sample mean differences

A one-way ANOVA was applied in order to determine whether there were any differences among the means of the four sampled schools. A finding of no difference would render the four schools one sample, while the occurrence of a difference would reflect the four schools as different independent samples (Howell 1995:247). In this study the four schools were divided into two groups. The first group is referred to as group A and the second group as group as group B. A three-way ANOVA was computed on the three dimensions, which are called LESO, LESJ and LESE. A two-way ANOVA is an experimental design involving three independent variables in which every level of one variable is paired of the other dependent variable. In this study the three independent variables are grade, gender and school category.

The results of the mean differences of the two sampled groups were set at a probability of 0,05 with the degrees of freedom determined at about 1.930. In order to establish the degree of freedom, the two groups of learners (they are the 150 high

performing learners and the 150 low performing learners) were combined to form a total of 300 learners. The degree of freedom is established through adding the total number of the two groups of learners and then proceed to deduct two numbers from the total of all the learners. The number of learners was thus reduced to 298. In order to find the degree of freedom for gender, two numbers were subtracted from 150 to make a total of 148. The male and female samples consisted of 75 numbers each and these numbers were proportional. The degree of freedom for gender was determined at 1.958 because the combined number of male and female learners was 150.

Appendix F, attached at the end of this study report presents a table for determining the *t* score's level of rejection. A t-test is used to test for the differences between the means of two groups. The degree of freedom is the total number of the sample minus one number from the total sample.

Table 4.1 Representation of two-way analysis for high performing schools

	Total scores Attained scores	Percentage - %	Mean Score	Standard deviation
LESO	6000 3990	66.6	26.6	2.98
LESJ	9000 7395	82.16	49.3	21.23
LESE	9000 7245	80.5	48.3	20.87

4.6.2 ANOVA for LESO

A series of ANOVAs was conducted to determine whether there were significant differences between the grades and gender for the high performing schools and low performing schools variables regarding the dependent variable LESO. The study

analysis indicated that learners from the high performing schools scored 66.6% on the LESO, as compared to learners from low performing schools who scored 53.3% on the LESO. The difference in their percentages was 13.3%. The mean statistic for high performing schools was 26.6 regarding the dimension LESO. The mean statistic, which showed a statistically significant difference among the low performing schools was 21.3 for the LESO. Their mean difference of the high performing schools and low performing schools was 5.3.

The mean standard deviation for the high performing schools was 2.98. Low performing schools, on the other hand, showed a mean standard deviation of 2.29. The standard deviation variance was 0.69. The 10% difference between the learners at high performing schools and the learners at low performing schools represented a statistically significant difference. This implies that learners from high performing schools are more involved in their learning processes than learners from low performing schools. The latter is less aware of their academic progress than learners from schools which are performing well. It can also be deduced from the results that learners at high performing schools set higher standards for themselves than learners from low achieving schools.

Table 4.2 Representation of two-way analysis for low performing schools

	Total scores Attained scores	Percentage - %	Mean Score	Standard deviation
LESO	6000 3195	53.3	21.3	2.29
LESJ	9000 6345	70.5	42.3	16.57
LESE	9000 7355	70.61	42.36	16.6

4.6.3 ANOVA for LESJ

A series of ANOVAs were conducted to determine whether there is any mean difference between the scores of learners from the high performing schools and learners from the low performing schools. Learners from the high performing schools scored 82.16 % compared to learners from low performing schools who scored 70.5%. The difference in their percentages was 11.66%.

There was no significant mean difference found between the high performing schools with regard to LESJ. Their combined mean was 49.3. There was also no mean difference between the low performing schools with regard to LESJ. Their mean score was 42.3. There was however, a significant mean difference between the two groups of schools on gender and grades with regard to LESJ. The mean difference was calculated on 7. The mean standard deviation for the high performing schools was 21.23, while it was found to be 16.57 for the low performing schools. The standard deviation variance was found to be 4.66.

In practice the above results imply that learners at high performing schools take more responsibility for their own learning progress and they expand more effort to achieve than learners from schools which are low performing. The results also indicate that learners at high performing schools attribute their success and failure to their own capabilities and effort, while learners at low performing schools tend to attribute their success and failure to the educators' ability to teach and the level of difficulty of the learning area.

4.6.4 ANOVA for LESE

A series of ANOVAs were conducted to find out whether the two groups of schools, namely schools A and schools B, differ with regard to LESE. Learners from the high performing schools scored 80.5% compared to learners from low performing schools

who obtained a score of 70.16%. The percentage difference in their scores was 10.34%. There was no significant difference between the high achieving schools' mean regarding gender and grades. This observation was also true of the scores of the low achieving schools on the dimension LESE. The mean for the high performing schools was 48.3, while it was 42.36 for the low achieving schools. The mean difference between their scores was 5.94. The mean standard deviation for the high performing schools was 20.87 and for low performing schools it was 16.6. The standard deviation difference was 4.27.

The above-mentioned disparities of the study statistics indicate that learners at high performing schools are more self-motivated than learners at low performing schools. In practice this implies that learners from high performing schools are not easily put off or demotivated by failure or the challenge of difficult tasks. Learners from low performing schools, on the other hand, are easily demotivated by failure and the challenge of difficult tasks. It can also be deduced that learners from high performing schools more readily persevere to attain the desired goals than learners from the low performing schools. The latter seem to put in little effort, if any, in order to achieve the desired goals.

4.7 SUMMARY OF THE MEASURES OF CENTRAL TENDENCY

Table 4.3 summarizes the mean scores, standard deviations and percentages of the two samples studied. The results of the two-way ANOVAs described previously, indicated significant differences between high performing schools and low performing schools concerning the independent variables, namely gender and grade, on LESO, LESJ and LESE.

Tables 4.4 and 4.5 below show the differences on gender on the LESO dimension of self-regulated learning. The results reflected in these tables indicate that the mean scores of male and female learners from the high performing schools (53.2)

differ from the mean scores of male and female learners from the low performing schools (42.6). In practice this implies that the male and female learners from the high performing schools are more in touch with their own learning process than male and female learners from the low performing schools.

Table 4.3 Differences of the means and standard deviations for LESO, LESJ and LESE between both high and low performing schools

	Total scores and attained scores for both high performing schools and low performing schools		Percentage -% differences	Mean Score differences	Standard deviation differences
LESO	6000	3990 - 3195=795	66.6 - 53.3=13.3	26.6-21.3=5.3	2.98-2.29=0.69
LESJ	9000	7395-6345=1050	82.16-70.5=11.66	49.3-42.3=7	21.23-16.57=4.66
LESE	9000	7245-6355=890	80.5-70.16=10.34	5.94-42.36=5.94	20.87-16.6=4.27

Table 4.4 LESO means, standard deviations on gender of the high performing schools

Gender	No	Total score	Obtained score	mean	standard deviation	percentage-%
Males	75	3000	1985	26.47	15	33.08
Females	75	3000	2005	26.73	15.9	33.41
Total	150	6000	3990	26.6	2.98	66.6

Table 4.5 LESO means, standard deviations on gender of the low performing schools

Gender	No	Total score	Obtained score	mean	standard deviation	percentage-%
Males	75	3000	1582.5	21.1	1.99	26.37
Females	75	3000	1612.5	21.5	2.59	26.87
Total	150	6000	39.98	22.6	2.29	53.2

Results displayed in tables 4.6 and 4.7 below present the gender differences of both the high performing schools' learners and the low performing schools' learners in the learner efficacy regarding the self-judgement process. The mean scores indicate that the male and the female learners from the high performing schools (98.52) differ from the male and the female learners attending low performing schools (84.6). These differences indicate that both male and female learners at high performing schools take more responsibility for their own learning than learners from low performing schools.

Table 4.6 LESJ means, standard deviations on gender of the high performing schools

Gender	No	Total score	Obtained score	mean	standard deviation	percentage-%
Males	75	4500	3608	48.1	14.6	40.08
females	75	4500	3782	50.42	15.4	42
Total	150	9000	7390	49.27	21.23	82.5

Table 4.7 LESJ means, standard deviations on gender of the low performing schools

Gender	No	Total score	Obtained score	mean	standard deviation	percentage-%
Males	75	4500	3154.5	42.06	11.7	35.05
females	75	4500	3190.5	42.54	11.68	35.45
Total	150	9000	6345	42.3	15.89	70.5

Tables 4.8 and 4.9 represent the different variations between the male and female learners from both the high performing schools and the low performing schools. There is difference in mean, standard deviation and percentage scores of both groups. The mean score of male and female learners from the high performing schools differ(96.6) differ from the mean score (84.73) of male and female learners from low performing schools. These statistical differences imply that male and female learners from the high performing schools attribute their success and failures to the effort they put into their studies while the learners from the low performing schools attribute success to external factors like the easiness of the learning area.

Table 4.8 LESE means, standard deviations on gender of the high performing schools

Gender	No	Total score	Obtained score	mean	standard deviation	percentage-%
Males	75	4500	3652.5	48.7	14.72	40.58
females	75	4500	3592.5	47.9	14.69	39.92
Total	150	9000	7245	48.3	20.87	80.5

Table 4.9 LESE means, standard deviations on gender of the low performing schools

Gender	No	Total score	Obtained score	mean	standard deviation	percentage-%
Males	75	4500	3176.48	42.35	11.7	35.29
females	75	4500	317.52	42.38	11.74	35.32
Total	150	9000	6355	42.36	16.6	70.6

4.8 STATISTICAL ANALYSIS

The purpose of this paragraph is to present and to test the hypotheses of the study in terms of the null hypotheses. The research study posed the five hypotheses as mentioned in chapter one (cf 1.8).

The null hypotheses to be tested include:

(a) There is no significant difference among learners with regard to self-efficacy for self-regulated learning from the two sampled groups of schools with regard to self-efficacy for self-regulated learning on self-observation.

(b) There is no significant difference among learners in the grouped schools with regard to self-efficacy for self-regulated learning on self-judged processes.

(c) There is no difference among learners of the two groups of schools with regard to self-efficacy for self-regulated learning self-evaluation.

(d) There is no difference in the self-efficacy of male learners with regard self-efficacy for self-regulated learning.

(e) There is no difference in self-efficacy of female learners with regard self-efficacy for self-regulated learning.

4.9 ANALYSIS OF VARIANCES STUDIED

An analysis of the variance was calculated for testing the main effects and interactions associated with school groups (that is, high achieving vs low achieving schools) where gender and grades serve as independent variables, and with learner self-efficacy for self-regulated learning as dependent variable. The efficacies for self-regulated learning scores were obtained by adding up the item responses and dividing them by the total number of factors.

A two-way ANOVA analysis of variance was calculated one for each dimension or factor. The results of this analysis are presented under the following subsections dealing with LESO, LESJ and LESE respectively

4.9.1 Learner efficacy for self-observation

The results of the two-way ANOVA analysis with respect to learner efficacy for self-observation, as measured by the Learners' Self-efficacy for Self-regulated Learning Scale indicated the following variances. There was a statistically significant

difference in levels for both gender and grades as independent variables with regard to low and high performing schools.

Mean levels of perceived self-efficacy for self-regulated learning as regards the LESO dimension showed a variance of 5.3 when the two groups (high performing schools and low performing schools) were pooled together. The two-tailed test was conducted to test the null hypothesis, namely that there is no significant difference between the mean scores of the high performing and low performing schools on the dimension LESO. The alpha, which determines the rejection level, was set at 0.05 with a degree of freedom (that is total number of the sample minus two) of 300-2 (298) (1.930). A *t* test comparing the two means (26.6 and 42.3) for both high and low performing schools was conducted and it indicated a significant t (298) = 1.97, $p < 0.05$ (1.930). The results demonstrated that learners from high performing schools exhibited significantly higher self-efficacy for self-regulated learning on the LESO dimension than low performing school learners.

4.9.2 Learner efficacy for self-judgement

The results of the two-way ANOVA analysis with respect to learner efficacy for self-judgement process, as measured by the Learners' Self-efficacy for Self-regulated Learning Scale, indicated statistically significant differences between the two groups of schools. Both gender and grades, as independent variables indicated differences in low and high performing schools when compared. Mean levels of perceived self-efficacy for self-regulated learning on the LESJ dimension showed a variance of 7 when the two groups were pooled together. The two-tailed test was conducted to test the null hypothesis, namely that there is no significant difference between the mean scores of the high performing and low performing schools on the dimension LESJ. The alpha, which determines the rejection level, was set at 0.05. A - test comparing the two means (49.3 and 42.3) for both high and low performing schools) was conducted. It indicated a significant t (298)=1.98, $p < 1.930$. The results

demonstrated that high performing school learners showed significantly higher self-efficacy for self-regulated learning on the LESJ dimension than learners from low performing schools.

4.9.3 Learner efficacy for self-evaluation

The results of the two-way ANOVA analysis with respect to learner efficacy for self-response, as measured by the Learners' Self-efficacy for Self-regulated Learning Scale, indicated statistically significant differences in the levels for both gender and grades as independent variables regarding low and high performing schools.

Mean levels of perceived self-efficacy for self-regulated learning on the LESE dimension showed a variance of 5,94 when the two groups were compared. The two-tailed test was conducted to test the null hypothesis, namely that there is no significant difference between the mean scores of the high performing and low performing schools on the dimension LESE. The alpha, which determines the rejection level, was set at 0.05. A t test comparing the two means (48.3 and 42.36) for both high and low performing schools) indicated a significant $t(298) = 2.02$, $p < 1.930$. The results demonstrated that high performing school learners showed significantly higher self-efficacy for self-regulated learning on the LESE dimension than low performing school learners.

4.9.4 Summary of the mean differences of independent variables

It was surprising to note that there is significant level of mean differences for both groups of schools regarding all the independent variables that were studied, that is gender and grades.

4.10 CONCLUDING OUTCOMES AS REGARDS THE HYPOTHESES

The aim of this chapter was to present the statistical analysis of the data collected, based on the factorial analysis of the instrument and the three dimensions tested (LESO, LESJ and LESE) on both grades and gender. Based on the aforementioned analyses, the following decisions were arrived at regarding the various research hypotheses.

Hypothesis 1: Rejection of the null hypothesis that there is no significant difference between the two groups of schools with regard to self-efficacy for self-observation.

This decision is based on the results of the ANOVA for the learner self-efficacy for self-observation, revealing a significant level effect of 5.3 on grouped schools.

Hypothesis 2: Rejection of the null hypothesis that there is no significant difference between the two groups of schools with regard to self-efficacy for self-judged processes. This decision is based on the results of the ANOVA for the learner self-efficacy for self-judged processes, revealing a significant level effect of 7 on grouped schools.

Hypothesis 3: Rejection of the null hypothesis that there is no significant difference between the two groups of schools with regard to self-efficacy for self-evaluation. This decision is based on the results of the ANOVA for the learner self-efficacy for

self-response, revealing a significant level effect of 5.94 on grouped schools.

Hypothesis 4: Rejection of the null hypothesis that there is no significant difference between the two groups of schools with regard to self-efficacy for self-regulated learning processes with regard to males among the two groups of schools. This decision is based on the results of the ANOVA for the male learners of the two

samples, which showed a significant level of 2.01 higher than the rejection level of 1.58.

Hypothesis 5: Rejection of the null hypothesis that there is no significant difference between the two groups of schools with regard to self-efficacy for self-regulated learning processes between the two groups of females in the two groups of schools. This decision is based on the results of the ANOVA for the female learners of the two samples, which showed a significantly higher level 1.99 than the rejection level of 1.958.

4.11 CHAPTER CONCLUSION

Chapter four presented the data analysis of the study. The methodology undertaken to sort and divide data was outlined.

The study was concerned with the evaluation of secondary schools learners' efficacy for self-regulated learning. The study looked at the independent variable dimensions of goal setting (LESO, LESJ and LESE) and found significant variance higher amongst the three variables dimensions for high performing schools as against lower performing schools. On the independent variables, which are gender and grades, it was found that high performing schools had higher levels of self-efficacy for self-regulated learning in both grades and on gender.

Chapter five introduces the significant findings of the data analysis and its implications.

CHAPTER FIVE

CLOSING PERSPECTIVES

5.1 INTRODUCTION

Chapter five presents conclusions and implications of the study. The chapter also deals with a number of suggestions for further research. These discussions, implications and suggestions are based on the results as reflected in chapter four. Extrapolations from this study sample should be done with consideration as the study was selective and did not incorporate all the secondary schools in the Free State province.

The study was primarily concerned with the evaluation of grade twelve learners' efficacy for self-regulated learning. In order to achieve such evaluation, the study looked at the independent variables as dimensions of goal setting, namely LESO, LESJ and LESE.

The literature study that was done on self-efficacy has shown that the factors which are related to low self-efficacy, are:

- Lowered self-esteem;
- Helplessness;
- Lack of persistence; and
- Lack of self-belief.

These factors impact negatively on the development of the individual and add to the complexities that mar the process of learning.

5.2 SUMMARY OF THE STUDY

Against the background of the research outcomes it is important to recapulate on the importance of this study, the statement problem, delimitations and the limitations of the study.

5.2.1 The importance of the study

The study investigated the self-efficacy for self-regulated learning among learners at township schools which had pass rates above seventy percent and those with pass rates below forty percent in grade twelve examinations. The focus of the study was to explore the different learning styles which grade twelve learners apply in the learning process. The study also aimed at determining whether the different learning styles the learners utilize contribute to their results. It is therefore justified to see the study as pivotal in enhancing the effectiveness of learning in an OBE environment.

5.2.2 Statement of the problem

From the general overview of the problem of South African grade twelve learners' high failure rates, it could be deduced that the situation needs immediate attention. Among the different approaches undertaken by the government in order to address the situation, are the new schools that have been built, the OBE curriculum that has been implemented and the qualified educators who have been deployed in schools which had been underperforming.

This study looked at the social cognitive learning theory in order to find out more about how learners learn. Through exploring the theory on social cognitive learning, this study investigated how self-efficacy for self-regulated learning impacts on

schools with high failure rates and schools with low failure rates in the Free State province.

5.2.3 Delimitations of the study

This study was conducted in township schools which either obtained pass rates below forty percent or pass rates above seventy percent between 1997 and 2000 in the final grade twelve examinations. Schools from the rural areas and former white schools were excluded from the study.

This research study is limited within the field of Psychology of Education. Secondly the study is limited to schools in the peri-urban areas of the Free State province. For the purpose of this study, these areas are the following:

- Bloemfontein (Mangaung); and
- Welkom (Thabong).

5.2.4 Limitations of the study

The findings of this study can therefore not be extrapolated to all other secondary schools in South Africa. The following are considerations for not extrapolating the findings of the study:

- The study is limited to only peri-urban areas; and
- The results of the study could not be applicable to schools in the urban and rural areas because of different educational climates.

5.3 SUMMARY OF THE FINDINGS OF THE LITERATURE STUDY

An overview of the literature which was studied, makes it clear that there are different

ways in which a person can learn. Some of the ways of learning which were studied are habituation learning, associative learning and social cognitive learning (cf par. 2.2.1). Social cognitive learning was differentiated from the other two forms of learning (habituation learning and associative learning) in the sense that the former two display a holistic approach by emphasizing that learning is influenced by the person's cognition, environment and the subsequent behaviour, while the latter only emphasizes either the cognition or the environment or both.

It was also found that in order for effective learning to take place, the learner should be taught self-regulated learning strategies (cf par. 2.3). Among the self-regulated learning strategies alluded to are self-observation, self-judgement and self-evaluation. Moreover, it was illustrated that for OBE to be effectively practised in schools, self-regulated learning strategies are essential (cf par. 2.3.5).

The concept "self-efficacy" was explained as the individual's belief about his capabilities to organize and implement the actions necessary to attain the performances desired (cf par. 2.6.1). The underlying assumptions of the self-efficacy theory are that the stronger the individual's sense of efficacy is, the longer he will persist on a difficult task until a desired performance is attained. Likewise, the weaker the individual's self-efficacy, the less he will persist on a task. An individual 's self-efficacy was determined as to be influenced by performance accomplishment, vicarious experience, verbal persuasion and emotional arousal (cf par. 2.7).

Attributions were alluded to as reasons people ascribe to their successes and failures (cf par. 2.8). It became evident from the literature study that learners who attribute their failures to external factors like lack of ability, difficulty of the learning area and the inability of the educator to teach effectively, will have a lower sense of self-efficacy than learners who attribute failure to internal factors, like the lack of adequate planning, lack of persistency and lack of trying.

5.4 SUMMARY OF THE FINDINGS OF THE STATISTICAL ANALYSIS

The results of this study revealed a statistically significant difference between the two groups of schools evaluated, namely the schools that were performing well and those that were not performing well. The study rejected all the hypotheses, indicating that there were disparities in the two groups of schools in terms of their approaches to learning and their inherent attributions attached to learning.

5.4.1 Difference in LESO

The mean scores for high performing schools showed slightly higher levels of percentage than low performing schools with regard to LESO, for both females and males, as well as for grades. The study found that the learners from high performing schools are able to study effectively and concentrate on their learning even when there are more interesting things to do. This attitude can be attributed to good time management and goal planning which were found lacking in the learners from the low performing schools. In addition to these disparities that the study revealed, the ability or inability to get information from sources other than the educator, was seen as an important factor for learners to be less or more informed (cf par.2.3).

5.4.2 Difference in LESJ

The mean scores for high performing schools displayed somewhat higher percentage levels than low performing schools with regard to LESJ, for both females and males, as well as grades. The differences between the two could be attributed to learners' ability or inability to give themselves enough time to study, as well as their level of motivation to learn. Intrinsic motivation to learn is seen as an important component of effective learning, enabling learners to be more focused on their learning processes and satisfied about their level of achievement (cf par.2.9.3).

5.4.3 Difference in LESE

The mean scores for low performing schools showed lower levels of percentage than high performing schools with regard to LESE, for both females and males, as well as grades. Practice or the lack thereof is regarded as the major factor which differentiates between the two groups of schools. From the literature studied it became clear that practice or repetition of the desired behaviour is important in order to master what is to be achieved (cf par.2.5.2).

5.5 SUGGESTIONS FOR THE ENHANCEMENT OF SELF-EFFICACY

The following suggestions are made on the basis of the research that has been done in this study.

5.5.1 An atmosphere of achievement

Learners from the high achieving schools seem to be strongly influenced by the atmosphere of achievement created by their predecessors. Through vicarious learning, it appears as though, once the school is able to achieve academically, it becomes easier for learners to believe that they are capable of achieving their goals, irrespective of their environmental circumstances. It is thus important for the schools to create a positive climate that will enhance a positive outlook of learners.

5.5.2 The school culture

Another reason why learners of achieving schools demonstrate high levels of efficacy might be contributed to the fact that the schools have already established a culture of excellence. When most of the learners seem to achieve, the few who lack efficacy

are positively influenced to achieve like their peers. It is clear that lack of excellence in academic achievement makes it difficult if not impossible for learners to model examples of excellence.

5.5.3 Peer modelling

Learners who are in the lower grades vicariously notice that the senior learners in their school are able to do well in the matric, and for them it creates a sense of self-believe that it is also possible for them to do well. The peer pressure as regards academic achievement thus results in good performances and also increases the collective efficacy of the whole school. It becomes easy for learners and educators to understand each other in view of the mission of the school. It is important that schools start peering classes that will enhance the learners' collective efficacy about their own schools.

5.5.4 The school' s record of excellence

As regards the performance accomplishment aspect, repeated successes create mastery expectations, and repeated failures lower them. The latter seems to be true of low achieving schools, as they tend to constantly slide back in academic achievements. One possible reason for such weak accomplishment might be that the behaviour of non-achievement in the low achieving schools is being modelled, even though different stakeholders may be gearing towards improving the situation.

The level of self-efficaciousness of the two groups of learners differs. It appears that it would ask of an individual an immense deal of strain to keep himself to function as if outside the group. Taking into consideration that learners in sampled schools A (high achieving schools) have recorded high pass rates over the past years, the group swing would be that of earnest passion to uphold the group excellency. Likewise, if it happens that in sampled schools B (low achieving schools) the grade

twelve outcomes in the past have been that of dismal failure, the group swing would be one of confusion and unplanned goal attainment. It appears that it would take an individual exceptional determination to do well within such school climate.

The sampled schools feature significant differences regarding extramural activities and it underlines the perception that transference of motivation from the playgrounds to the classrooms might not be the same for both sets of schools.

Schools should work at their **image**: The achievement of a particular school forms a historical landmark and a yardstick for future learners. The achievements become something to hold on to and are regarded as a possession of the school and learners alike. Collective and individual efficaciousness towards breaking the established records of achievements becomes an important goal. It becomes obvious that if there has not been such kinds of glory and pride at the school, the goals become an illusive ideal and remotely unobtainable. Much more should be made of the achievements of learners, even if they are very few in numbers.

Research should be done in the field of South African learners' self-efficacy:
It became apparent in this study that the above mentioned field has not been adequately researched in South Africa. Especially with the implementation of OBE in South African schools, future research should be done on the effects of nuclei or core group efficaciousness of learners for modelling behaviour. It is the opinion of the researcher that grouping of learners into cells or groups to enhance their efficaciousness would be important for the appraisals of both high performing and especially low performing schools. When learners who have low self-efficacy are grouped with learners with high self-efficacy, could as well change with time as they would be reciprocated by the behaviours that might be mastered by their peers.

Suggestions should be made to the Free State Department of Education related to the development of self-efficacy of learners: The social learning theory holds that

modelling is an important part of learning, and therefore schools should be supported in creating environments that enhance the learners' sense of self-efficacy.

5.5.5 The school' s extra-mural accomplishments

The activities the schools outside the classroom are important for the learner and the school concerned. The extra-mural activities, in some schools have been given priority over the academic component of the learner. These activities can be any kind of sport or cultural activities, and the school and learners come to be known through their specialities in these facets. Outside classrooms activities are socially desirable outcomes of the school and are given accolades and prestige. The sponsors also sell their products through funding the same activities at the schools. Schools should create opportunities for their learners to be involved in extra-mural activities. The experiences the learners will gain when participating in extra-mural activities, will enhance the learners' awareness of their other capabilities other than academic potentials. This awareness will impact positively on their self-concept and a general feeling of well-being.

5.5.6 The image of the school

The image of the school is boosted if the outcomes are excellent and the general climate of the school is amplified. The achievement of the particular school form a historical landmark and a yardstick for future learners. The achievements become something to hold onto and a possession of the schools and learners alike. Collective and individual efficaciousness towards breaking the established records of achievements becomes and important immediate goal. It becomes obvious that if there has not been such kinds of glory and pride at the school, the goals become an illusive ideal and remotely unobtainable.

The sampled schools feature significant differences regarding extramural activities and it underlines the perception that transference of motivation from the playgrounds to the classrooms might not be the same for both sets of schools.

5.6 PROBLEMS EXPERIENCED WITH THIS RESEARCH STUDY

A number of problems were encountered during both the literature study and the empirical research.

5.6.1 Problems experienced with the literature study

Inadequate material in the field of self-efficacy for learner was noted, especially with reference to the South African situation. A large portion of literature utilized in this research study was American and had to be modified to suit the South African education scenario.

With the implementation of OBE in South African schools a solid body of knowledge about South African learners' self-efficacy is needed.

5.6.2 Problems experienced during the empirical research

The problems encountered at schools could be described as protection of learners by the heads of schools and educators, but also as research apathy by schools.

- Protection of learners by heads of schools and educators. It was seen as important by both the heads of schools and educators in order to protect their learners from exposure to too many questionnaires by post-graduates students from the local university.

- Research apathy at schools. It became apparent through observation during interaction with educators and heads of schools that student researchers were not welcome at their schools; this was despite having a permission letter from the Department of Education.

5.7 IMPLICATIONS OF THE RESULTS OF THE STUDY

Based on the results of this study, it seems imperative to offer suggestions related to the development of self-efficacy of learners in the Free State province to the Department of Education. Learners' efficaciousness for self-regulated learning can be used by the Free State Department of Education to predict the extent to which the learners in various schools can attain the educational outcomes set. The social learning theory holds that modelling is an important part of learning, and as such, schools should create environments that would enhance the learners' sense of self-efficacy (Bandura 1977a:22).

In order to attain the ideals of learners' excellence in education, the researcher is of the opinion that only when full attention is paid to learners at grade twelve level at the beginning of the year; when full instructional support is given, and when the outcomes become visibly positive, then the environment for enactment for the positive behavoiur would be created. It seems to be difficult to begin building at lower grades the kind of achievement that is necessary to change the perception of the public and that of learners themselves if there are no role models to be emulated.

5.8 SUGGESTIONS FOR FUTURE RESEARCH

Collective efficacy for the whole school is important to have a global outlook of the way the schools are functioning. This will include the way educators and learners perceive their own schools. The wholeness approach investigation of efficacy

entwines well with what Bandura refers to as reciprocal determinism, namely that behaviour, environment and people's cognitions all direct the kinds of behaviour outcomes.

Verbal persuasion alone seems to be hard to influence the cognitions of learners and to motivate them for enhancement of efficacy to self-regulate their learning behaviour. Verbal persuasion should be accompanied by continuous reinforcement for those learners who are doing well. The desired outcomes demonstrated by the learners should be reinforced immediately. The incentive and the outcome behaviour demonstrated should be followed relatively quickly by reward. The learners should be well aware of the kind of behaviour that is rewarded.

Secondly, future research should be done on the effects of nuclei or core group efficaciousness of learners for modelling behaviour. It is the opinion of the researcher that grouping of learners into cells or groups to enhance their efficaciousness would be important for the appraisals of both high performing and especially low performing schools. When learners who display lower levels of self-efficacy are grouped with learners with high self-efficacy, the former could well change with time as they would be reciprocated by the behaviours that might be mastered by their peers.

The above suggestions might be heavily influenced by the educators, who happen to be both parents and role models for the learners. Educators could enhance the learners' motivation, goal attainment and time management for self-efficacy if they believe in their learners, and not only believing, but also demonstrating their understanding of the learner's potentials.

Lastly, the researcher is of the opinion that schools should create their own mission statements, cultures of excellencies, be it academic or extramural activities. These cultures should be instilled, but not indoctrinated in learners. Furthermore, the whole

school, which includes educators, parents, learners and other stakeholders should work collectively toward maintaining standards of excellence.

5.9 SUMMARY OF THE RESEARCH

Chapter one: An introduction of the research was supplied and the aim, methodology, research instrument to be used, were introduced.

Chapter two: The concept of self-efficacy was highlighted, major efficacy dimensions were explained and self-regulatory mechanisms were outlined.

Chapter three: Research methodology used and data collection strategies were discussed.

Chapter four: The data collection strategies and data analysis were looked into.

Chapter five: The conclusions and implications of the study were discussed and suggestions for further research were presented.

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APPENDIX A

RESEARCH QUESTIONNAIRE

SECTION A : THE PURPOSE OF THE RESEARCH

The purpose of this research is about questions about yourself and how you rate yourself regarding:

1 How you approach leaning.
2 How you solve problematic learning situations.
3 How you believe you can manage your school work.

GENERAL INSTRUCTIONS

1 Do not supply your name on the questionnaire.
2 Do not supply the name of your school on the questionnaire.
3 All the information you give will be confidential.
4 There are no right or wrong answers.
5 Answer all questions with honesty.
6 Answer all the questions as instructed.

SECTION B - THE LEARNER'S PERSONAL INFORMATION

QUESTIONNAIRE 1

Give the following information about yourself, by marking a cross (X) where it is fitting. Answer all the questions.

1.1. Gender

Male	Female

1.2. Indicate the present standard or (grade) you are doing

11	12

SECTION C

QUESTIONNAIRE 2

Use the rating scale to assess how strongly you believe how well you can do the following:

1---------- 2 ---------- 3 ---------- 4 ----------

Strongly agree Agree Disagree Strongly disagree

Rate how well you belief you can or do the following.

For example:

Attend classes the whole month without being absent from school.

1	2	3	4 X

Now answer the following with honesty, do not be influenced by the previous answer. Do answer each question independently.

Rate how well you do or can do the following:

LESO

2.1 Finish homework assignments by deadlines.

1	2	3	4

2.2 Study when there are other interesting things to do.

1	2	3	4

2.3 Study everyday for the whole week.

1	2	3	4

2.4 Concentrate on school subjects.

1	2	3	4

2.5 Take class notes when the educator is teaching.

1	2	3	4

2.6 Use the library to get information for class assignments.

1	2	3	4

2.7 Plan your schoolwork

1	2	3	4

2.8 Organize your schoolwork.

1	2	3	4

2.9 Remember information presented in class and textbooks.

1	2	3	4

2.10 Arrange a place to study without distractions.

1	2	3	4

LESJ

3.1 Participate in class discussions.

1	2	3	4

3.2 Cope with difficulties you experience in a subject or learning area.

1	2	3	4

3.3 Give yourself enough time for the task you don't understand.

1	2	3	4

3.4 Plan to prepare for your final examination.

1	2	3	4

3.5 Give yourself a break time when you understand your tasks.

1	2	3	4

3.6 Accept your responsibility if you pass or fail.

1	2	3	4

3.7 Believe that your educators can make you make better person.

1	2	3	4

3.8 Believe that township (environment) affects how you learn.

1	2	3	4

3.9 Believe that if you move out of township school, you can become a better learner.

1	2	3	4

3.10 Believes it is possible to get A or B symbols at the township schools.

1	2	3	4

3.11 Believe you need a special person to draw your timetable for you.

1	2	3	4

3.12 Not to study when you know you should be.

1	2	3	4

3.13 Praise yourself when you are doing well in class.

1	2	3	4

3.14 Belief that friends interfere in your studies.

1	2	3	4

3.15 Believe your parent's advices can help you.

1	2	3	4

LESE

4.1 Accept that you must repeat something if you don't know it.

1	2	3	4

4.2 Believe that is luck if you get marks in a test, more than 60%

1	2	3	4

4.3 Believe you have received good marks in a test, if you get more than 60%.

1	2	3	4

4.4 Believe that a test was easy if you received more than 60%.

1	2	3	4

4.5 Believe you can learn best in a group.

1	2	3	4

4.6 Believe you can learn alone.

1	2	3	4

4.7 Believe you can participate well in a group.

1	2	3	4

4.8 Accept that you need to be taught by other learners.

1	2	3	4

4.9 Believe that you can teach other learners.

1	2	3	4

4.10 Believe that other learners can listen to you when teach them.

1	2	3	4

4.11 Compare yourself against your classmates.

1	2	3	4

4.12 Judge yourself against yourself.

1	2	3	4

4.13 Judge yourself against what your educators expects from you.

1	2	3	4

4.14 Compare yourself with the achievement of learners of your same ability in class.

1	2	3	4

4.15 Judge yourself with against your past achievement

1	2	3	4

APPENDIX B

Letter of permission : Principals of participating schools

The Principal

.....

.....

.....

RE: PERMISSION FOR RESEARCH

I here request permission for your learners to participate in the survey study. The aim of the study is compare learners personal efficacy constructs, that is how strong is their belief in doing their school work.

This research study forms part of an M.ed dissertation at Vista University-Welkom Campus. The participation of your child is voluntary, and personal identities are secret.

I hope your permission will be positive
Yours faithfully

.....

L. Segalo (Mr)

APPENDIX C

Letter of permission : Parents of participating learners

Dear Parent

RE: PERMISSION FOR YOUR CHILD TO PARTICIPATE IN A RESEARCH STUDY

I here request permission for your child to participate in the survey study. The aim of the study is compare learners personal efficacy constructs, that is how strong is their belief in doing their school work.

This research study forms part of an M.ed dissertation at Vista University-Welkom Campus. The participation of your child is voluntary, and personal identities are secret.

I hope your permission will be positive

Yours faithfully

.....

L. Segalo (Mr)

APPENDIX D

Request for conducting research in schools

The Department of Education
Planning Directorate
C S Swarts Building
BLOEMFONTEIN

Dear Sir

RE: REQUEST FOR CONDUCTING RESEARCH IN SCHOOLS

I would like to conduct a comparative quantitative survey among learners in secondary schools in the Free State Province, in Mangaung(Bloemfontein) and Thabong(Welkom).

My personal demographics are as follows:

Tittle and name	:Mr L Segalo
Degree	:MED
Promoter	:Dr A Weeber
Dissertation Title	:The influence of self-efficacy on learning in secondary schools in the Free State Province.

The study emanated as the result of high failure rate among Grade Twelve learners in South Africa, in particular the Free State Province. The aim of the study is to establish the self belief systems of learners with regard to self-efficacy. The study seeks to establish if

there exist concrete differences in self-efficacy among the learners in this two urban areas, and if levels of efficacy are the subsequent resultant. Learners who will participate are grade twelve learners. It is therefore imperative for the learners to make a meaningful contribution in this regard.

The attached questionnaire would not take a learner more than thirty minutes of his or her precious time. It is recommended that questionnaires be completed off school hours, to enable the smooth running of classes.

Once the results are available, a copy of the dissertation will be provided to the department.

The anonymity and confidentiality of the school, learners's names are ensured. For further questions and information please contact:

Thanking you in advance

MR L.SEGALO
DR A WEEBER
(Vista University-Welkom)

APPENDIX E

Reply from the Department of Education

APPENDIX F

T-test significance level of rejection

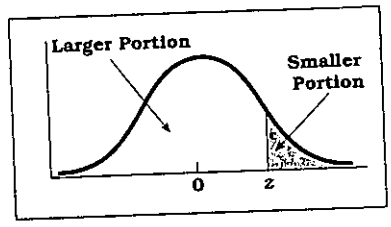

Table D.10 The Normal Distribution (z) (Source: The entries in this table were computed by the author.)

z	Mean to z	Larger Portion	Smaller Portion	z	Mean to z	Larger Portion	Smaller Portion
.00	0.0000	0.5000	0.5000	.40	0.1554	0.6554	0.3446
.01	0.0040	0.5040	0.4960	.41	0.1591	0.6591	0.3409
.02	0.0080	0.5080	0.4920	.42	0.1628	0.6628	0.3372
.03	0.0120	0.5120	0.4880	.43	0.1664	0.6664	0.3336
.04	0.0160	0.5160	0.4840	.44	0.1700	0.6700	0.3300
.05	0.0199	0.5199	0.4801	.45	0.1736	0.6736	0.3264
.06	0.0239	0.5239	0.4761	.46	0.1772	0.6772	0.3228
.07	0.0279	0.5279	0.4721	.47	0.1808	0.6808	0.3192
.08	0.0319	0.5319	0.4681	.48	0.1844	0.6844	0.3156
.09	0.0359	0.5359	0.4641	.49	0.1879	0.6879	0.3121
.10	0.0398	0.5398	0.4602	.50	0.1915	0.6915	0.3085
.11	0.0438	0.5438	0.4562	.51	0.1950	0.6950	0.3050
.12	0.0478	0.5478	0.4522	.52	0.1985	0.6985	0.3015
.13	0.0517	0.5517	0.4483	.53	0.2019	0.7019	0.2981
.14	0.0557	0.5557	0.4443	.54	0.2054	0.7054	0.2946
.15	0.0596	0.5596	0.4404	.55	0.2088	0.7088	0.2912
.16	0.0636	0.5636	0.4364	.56	0.2123	0.7123	0.2877
.17	0.0675	0.5675	0.4325	.57	0.2157	0.7157	0.2843
.18	0.0714	0.5714	0.4286	.58	0.2190	0.7190	0.2810
.19	0.0753	0.5753	0.4247	.59	0.2224	0.7224	0.2776
.20	0.0793	0.5793	0.4207	.60	0.2257	0.7257	0.2743
.21	0.0832	0.5832	0.4168	.61	0.2291	0.7291	0.2709
.22	0.0871	0.5871	0.4129	.62	0.2324	0.7324	0.2676
.23	0.0910	0.5910	0.4090	.63	0.2357	0.7357	0.2643
.24	0.0948	0.5948	0.4052	.64	0.2389	0.7389	0.2611
.25	0.0987	0.5987	0.4013	.65	0.2422	0.7422	0.2578
.26	0.1026	0.6026	0.3974	.66	0.2454	0.7454	0.2546
.27	0.1064	0.6064	0.3936	.67	0.2486	0.7486	0.2514
.28	0.1103	0.6103	0.3897	.68	0.2517	0.7517	0.2483
.29	0.1141	0.6141	0.3859	.69	0.2549	0.7549	0.2451
.30	0.1179	0.6179	0.3821	.70	0.2580	0.7580	0.2420
.31	0.1217	0.6217	0.3783	.71	0.2611	0.7611	0.2389
.32	0.1255	0.6255	0.3745	.72	0.2642	0.7642	0.2358
.33	0.1293	0.6293	0.3707	.73	0.2673	0.7673	0.2327
.34	0.1331	0.6331	0.3669	.74	0.2704	0.7704	0.2296
.35	0.1368	0.6368	0.3632	.75	0.2734	0.7734	0.2266
.36	0.1406	0.6406	0.3594	.76	0.2764	0.7764	0.2236
.37	0.1443	0.6443	0.3557	.77	0.2794	0.7794	0.2206
.38	0.1480	0.6480	0.3520	.78	0.2823	0.7823	0.2177
.39	0.1517	0.6517	0.3483	.79	0.2852	0.7852	0.2148