

**RELATIONSHIPS OF ACADEMIC SELF-EFFICACY, LEARNING STRATEGIES
AND ACADEMIC ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS IN
ZARIA, KADUNA STATE, NIGERIA**

BY

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FACULTY OF EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA**

APRIL, 2016

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**A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES,
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**DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELLING
FACULTY OF EDUCATION, AHMADU BELLO UNIVERSITY, ZARIA**

APRIL, 2016

DECLARATION

I declare that this dissertation titled; “Relationships of academic self-efficacy, learning strategies and academic achievement among secondary school students in Zaria, Kaduna state, Nigeria” is the result of my research effort and to the best of my knowledge has not been produced and presented for the award of a degree or diploma at this or any other Institution. All quotations and citations made in this work have been fully acknowledged in the reference pages.

Sign _____

Nasir Imrana MUHAMMAD

Date

CERTIFICATION

This dissertation entitled: “Relationships of academic self-efficacy, learning strategies and academic achievement among secondary school students in Zaria, Kaduna state, Nigeria” meets the requirements governing the award of degree of Masters in Educational Psychology (M.Ed. Psychology) of the Ahmadu Bello University Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This work is dedicated to my late father Imam Nasir and my beloved mother HajiaHauwa'u.

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I give thanks to the Almighty Allah, without whose help and guidance this work wouldn't have been possible. Alhamdulillah.

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DEFINITION OF TERMS

Academic Self-efficacy is the belief in one's own ability to successfully accomplish a given academic task.

Academic achievement is the performance of students in Mathematics and English test.

Learning strategies is the techniques learners used on how to help them remember things better or to do tasks more efficiently.

Rehearsal strategy is a kind of strategy employed by learners to remember material using repetition

Elaboration strategy is a kind of strategy used by the learner to builds an internal connection between what is being learned and previous knowledge

Organization strategy is a kind of strategy used by learners to restructure information into another format that is easier to understand by outlining main idea

ABSTRACT

This study employed correlational design to examine the Relationship of academic self-efficacy, learning strategies and academic achievement among secondary school students in Zaria, Kaduna state, Nigeria. Towards attaining this major goal, four specific objectives which were translated to research questions and hypotheses were raised and data were collected from 317 respondents involving 199 males and 118 female JSS3 students. Academic achievement test was administered to the students and they also filled Cognitive Learning Strategy Questionnaire structured on a five points fixed response format. The collected data were sorted and analyzed using Pearson product moment correlation at 5% alpha. The result suggests a significant positive relationship between self-efficacy and academic achievement among JSS students, $r = .119, p < .05$. The result also reveals a significant positive relationship between learning strategies and academic achievement among JSS students, $r = .143, p < .05$. When predominant learning strategy among JSS3 students was examined, the result suggests that JSS students used rehearsal strategy more than organization and elaboration strategies. Centered on this findings, it was recommended that students should be encouraged by teachers and parents to uphold rehearsal learning strategy or others that suit them and capable of boosting their academic achievements in school.

CHAPTER ONE INTRODUCTION

1.1 Background to the Study

This study on the “Relationship of academic self-efficacy, learning strategies and academic achievement among secondary school students in Zaria, Kaduna state, Nigeria” is part of an old but ongoing search for factors that can improve the low academic attainment of learners and the declining educational standards in institutions of learning, which have always posed major challenges to education systems all over the world (Patchen 2004; Slabbert, de Kock&Hattingh 2009; Steyn, Steyn & De Waal 2001). Such a quest for enhancing confidence and effective learning is necessitated by the evidence that correlates educational success with the development and prosperity of individuals as well as that of their communities (Wobmann, 2002). Also, low educational attainment is linked with joblessness, poverty, delinquency and crime (West &Pennel 2003; Vaughn, Bos&Schumm 2000). The notions of self-efficacy, effective learning and academic achievement have become more pronounced in the rapidly changing and competitive world of the 21st century and beyond, where students are expected to learn and confidently adapt readily to any new learning situation they encounter, and to participate fully and prosperously in their society with high level of self-belief (West &Pennel 2003).

With this in mind, series of educational workshops were organized for teachers to ensure the provision of quality public education and life-long learning for all students (Hatwood-Futrell 2001; Kellaghan&Greany 2004; Matsuura, 2002).

Some schools according to Kruger and Adams (2010) have introduced various projects and programs in order to face their educational challenges. While there may be visible changes in the systems because of the improvement introduced, the challenges are apparently still intimidating,

leading to incessant calls for reforms from parents and educationists in order to meet the needs of particularly those learners who are under-performing due to poor self-efficacy or learning strategies or have mild to moderate learning disabilities.

The most common approach of these programmes is to discourage learners from storing vast amounts of facts, but rather that they should “learn how to learn” new information by applying effective learning strategies (Castello 2000; Montgomery, 1998; Paris & Paris 2001; Van Keer&Verhaegde, 2005). According to Anderson (2000), bad performance in learning is not only caused by lack of relevant knowledge, but it is also the result of poor level of self-efficacy, poor learning and memory strategies.

‘Learning strategies’ are defined as “systematic plans, thoughts, affect and behaviour that are consciously invoked by learners to facilitate information processing, especially during the learning and the thinking processes” (Lopez, 2001; Mayer, 2008; Weinstein & Hume 1998) and enhance their self-efficacy (Linnenbrink&Pintrich 2003).

Self-efficacy is defined as “... a person’s judgment of his or her capability to organise and execute the courses of action that are required in bringing about certain desired levels of performance” (Bandura 1977a). ‘Academic self-efficacy’ is a learner’s belief in how well he or she can perform learning tasks to confident levels of achievement (Bong, 2002; PastorelliCaprara, Barbaraneli, Rola, Rozsa&Bandura 2001; Walker, 2003; Zimmerman 2000).

Self-efficacy beliefs are further described as predictors of learner motivation, thus affecting the choices they make, how much effort they expend, their persistence even in the face of obstacles, and their courage to seek help where they need it (Bong, 2002; Zimmerman, 2000).

Given the importance of knowledge about positive self-efficacy perceptions and learning strategies in learning situations, a study investigating influence of self-efficacy perceptions and learning strategies for the purpose of enhancing students' academic performance is essential. Although children are exposed to some form of strategy-use even before they become part of formal education (e.g. rehearsal strategy/repetition), Van Keer and Verhaegde (2005) insist that it cannot be assumed that they develop strategic knowledge spontaneously, or that they understand that they have developed strategic knowledge. Therefore, equipping learners with learning strategies enables them to manage and effectively regulate information, comprehension, knowledge acquisition and retrieval; while enhancing their positive self-efficacy beliefs raises their motivation to achieve at a higher level, as active, self-regulated and life-long learners (Linnenbrink & Pintrich 2003; Mayer, 2008). Walker (2003) argues that teachers have a major role to play in laying the foundation for their learners' future success.

1.2 Statement of the Problem

Following more than a decade of experience in the teaching enterprise in schools, the researcher has witnessed the yearly disappointment, frustration and controversies in students following the failure and under-achievement of scores of learners in school subjects.

To date, even with the reforms in the system of education, the failure rate among learners is still very high. As a consequence, many parents, out of concern for their children's future continue to move them from one school to another in search for 'better' education. Parents argued about what they perceive as the causes of learners' poor performance. For many years it has become customary everywhere to attribute the causes of success or failure of learners to factors of mainly contextual nature, such as a lack of resources, the lack of parental support, teachers' incompetence and ineffective school and teaching approaches (Du Toit 2001; Jinks & Lorsbach,

2003) but hardly does it occur to many that self-efficacy perceptions and the learning strategy used by students to learn is also a major factor.

However, Kivilu (2005) argues that school programmes are not in touch with learners' needs because they are still very academic and theoretical. Moving away from the trend of looking for factors that reside outside the learner, Mahomed (2003) and Grewel (2001) contend that the lack of discipline, confidence, commitment, low participation and rote-learning on the part of the learners are barriers to effective learning. Concurring with the latter view, Barr and Parret (2001) cited the common complaint heard from teachers about the learners' lack of discipline, their inability to read and to work independently, as well as their inclination to disruptive behaviour.

Echoing the views presented earlier, De Jager and Ferreira (2010) insist that learners cannot learn effectively because they lack self-belief and appropriate learning strategies, and that noticeable improvement in performance can be expected if intervention includes helping learners to belief in he/herself and also providing them with knowledge of effective learning/thinking strategies, and the motivation for learning to take responsibility for their own successes or failures.

In addition, De Jager and Ferreira (2010) raised the concern that many teachers do not know how to encourage students to belief in their ability because they lack self-efficacy too, or teach learning strategies because they themselves do not know about them, or that they may be teaching them without knowing that they are doing it. As a teacher and researcher, my observations are that many teachers and parents still incorrectly think that learning means cramming large quantities of information, and reproducing it in tests and examinations.

In most cases the learners cram the work without understanding the information. This makes it difficult for them to own, to use, or to build upon this information as personal knowledge (Kruger 2010). That could be seen to have a negative effect on the teachers and learners' morale, which contributes to the low achievement rates and the inability to fulfill the learners' aspirations as individuals and the community. In spite of the changes in the curricula, many teachers have maintained the status quo as traditional teachers, while others have developed to meet the challenges of providing quality education and a decent future for their children.

This study took the approach that the school, as a learning institution, has an obligation to increase the learners' chances of success in class by providing them with the leaning strategies that will help them to participate confidently and independently in learning. It was based on the above that the researcher feels it important to understand the extent self-efficacy and learning strategies relate to students' academic achievement.

1.3 Objectives of the Study

This study was carried out with the following objectives in mind;

1. To find out the predominant learning strategy used by JSS students.
2. To find out the relationship between self-efficacy and academic achievement of JSS students.
3. To find out the relationship between learning strategies and academic achievement of students.

1.4 Research Questions

Based on the objectives of the study, the following research questions were raised;

1. What is the predominant learning strategy used by JSS students?

2. What is the relationship between self-efficacy and academic achievement of JSS students?
3. What is the relationship between learning strategies and academic achievement of student?

1.5 Hypotheses

In order to answer research question 2 & 3, the following hypotheses were posed. Objective 1, and its corresponding research question does not require a hypothesis before it is achieved.

H₀₁: there is no significant relationship between self-efficacy and academic achievement of JSS students.

H₀₂: there is no significant relationship between learning strategies and academic achievement of JSS students.

1.6 Significance of the Study

The findings of this study will add to existing theory on the Relationship among academic self-efficacy, learning strategies and academic achievement among junior secondary school students in Zaria, Kaduna state, Nigeria.

The findings will also assist all stake holders in education, teachers, students, school administrators, curriculum developers, education policy makers and also parents in helping to enhance student's efficacy belief, learning strategy and academic achievement.

This study will help to determine the various forms of learning strategies used by students, and how such strategy can impact on their achievement. Most people ascribe different reasons for the dwindling fortune of education in Nigeria. It is the hope of this study that stakeholders through

this medium or others will come to appreciate the fact that poor learning strategy and low academic self-efficacy can all impact on student academic achievement.

It is also hoped that the findings of this study will help adolescents with aggressive behaviour to adjust to school activities by learning a better way of relating with their parents, teachers and even their peer group.

The questions this study raised and seeks to answer will help future researchers in the area of learning strategy and will also add to the existing body of literature on academic self-efficacy and academic achievement among JSS2 students.

1.7 Scope and Delimitation of the Study

The study is on Relationship of academic self-efficacy, learning strategies and academic achievement among secondary school students in Zaria, Kaduna state, Nigeria. The research was delimited to cognitive strategies used by JSS 3 students preparing for transition to senior classes; both boys and girls, and was confined to Government Secondary Schools in Zaria metropolis. The choice of this school was because the environment where they are based comprises of people representing the entire geographical region of the country. Logistics reason was also considered.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

In abid to explore Relationship among academic self-efficacy, learning strategies and academic achievement among junior secondary school students in Zaria, Kaduna state, Nigeria, a review of related literature on these variables were undertaken in order to explore related concepts and theories that support them.

2.2 Conceptual Framework

2.2.1 Concept of Self-efficacy

Self-efficacy is the belief in one's own ability to successfully accomplish something. It is a theory by itself, as well as being a construct of Social Cognitive theory. Self-efficacy theory tells us that people generally will only attempt things they believe they can accomplish and won't attempt things they believe they will fail. However, people with a strong sense of efficacy believe they can accomplish even difficult tasks. They see these as challenges to be mastered, rather than threats to be avoided (Bandura, 1994).

Self-efficacy perceptions (including academic self-efficacy) are defined as personal beliefs about, or judgment of one's capability to perform behaviours required for successfully bringing about specific outcomes (Bong 2002; Kitsantas 2002; Pastorelli, et al. 2001; Walker 2003; Woolfolk 2010).

Efficacious people set challenging goals and maintain strong commitment to them. In the face of impending failure, they increase and sustain their efforts to be successful. They approach difficult or threatening situations with confidence that they have control over them. Having this type of outlook reduces stress and lowers the risk of depression (Bandura, 1994).

Conversely, people who doubt their ability to accomplish difficult tasks see these tasks as threats. They avoid them based on their own personal weaknesses or on the obstacles preventing them from being successful. They give up quickly in the face of difficulties or failure, and it doesn't take much for them to lose faith in their capabilities. An outlook like this increases stress and the risk of depression (Bandura, 1994).

Perceived self-efficacy beliefs are hypothesized to predict learner motivation by affecting the choices the learner makes and the effort he/she expends on learning tasks, the persistence he/she exhibits even in the face of obstacles, and the courage to seek help whenever necessary.

Self-efficacy is also described as a mediator for the influence of other determinants of academic achievement, such as the learners' use of learning strategies and the formation of attribution patterns for failures and successes; and that when acting in concert with other common mechanisms of personal agency, it predicts academic outcomes (Martin 2004).

Research suggests that in contrast to learners with a lower sense of efficacy, learners with high efficacy perceptions are more likely to take initiative, set higher goals, use learning strategies, and monitor their progress in the learning environment. What is more, the highly efficacious learners achieve at a higher level than those with low or negative perceptions of themselves (Kitsanta 2002; Pajares& Graham 1999; Pastorelli, et al. 2001; Schunk 2003; Woolfolk 2010).

2.2.2 Sources of Self-Efficacy

The self-efficacy theory posits that learners derive their efficacy- information from the following major sources, namely: reciprocal interaction learning, past performances by themselves and others, persuasions by credible others and physical indexes (Pintrich&Schunk 2000; Schunk 2003; Zimmerman 2000).

- i. Reciprocal interaction learning and initial efficacy judgment

Schunk and Pajares (2003) assert that from early childhood learners engage in reciprocal interaction learning and exploratory activities with their families, peers and environment at home and in school through which they experience mastery that forms their initial sense of efficacy for learning. In turn, these initial experiences motivate the learner and promote future learning and foster clearer and advanced perceptions of self-efficacy (Pintrich&Schunk 2000; Schunk&Pajares 2003).

ii. Past performance or enactive experiences

Learning is enactive if the learner learns from the consequences of his or her own actions. They tend to retain and be motivated by actions that led to the led to success while they discard actions that lead to failure. Bandura (1999) concedes that performance accomplishments are very influential because they based on own mastery experiences. Success generally raises self-efficacy and failures lower it.

iii. Vicarious experiences

Just as they gain self-efficacy beliefs from their own and direct experiences, people derive their self-efficacy beliefs in much the same way from observing other people's successes and failures and as these people get rewarded, ignored or punished for their behaviour. It can be argued that people judge their capabilities by comparing their performance with those of others, especially if the models share similar traits with the observer. Thus, the performance of others serves as a standard for self-improvement Bandura (1999).

iv. Verbal persuasion

Verbal persuasion means trying to talk people into believing that they possess capabilities that will help them to reach their achievement goals. So, learners who are persuaded verbally that

they have the capability to master some given task are likely to be motivated to work harder and with sustained effort and with boosted self-efficacy beliefs than those that harbor self-doubt.

Self-efficacy is raised if the person persuaded believes that his/her actions can indeed be possible and effective. Unrealistic persuasions of personal competence only invite failure, discredit the persuader and further undermine the self-efficacy perception of the persuaded. The impact of persuasions on learners' self-efficacy tends to be as strong as the confidence of the persuaded in the persuader. Verbal persuasions are also likely to become believable if they are slightly exceeding what individuals believe they can do with just a little extra effort (Bandura (1999).

v. Physiological states

Literature review reveals that people's physiological arousals (sweating, vascular reaction, gastrointestinal secretions etc.) are indication of how they judge learning environment and their own abilities. Interventions that reduce or eliminate sense of threat and emotional arousal heighten the learners' perceived self-efficacy Bandura (1999).

2.3 Concept of Learning Strategy

Learning strategies seem to be techniques learners used on how to help them remember things better or to do tasks more efficiently. Several researchers have studied what learning strategies are and why they are effective in the learning process. Oxford (1990) takes us to a definition which breaks the term learning strategies down to its roots--the word strategy. The argument was that the word comes from the Greek word 'strategia' which means generalship or the art of war. Strategy meant the management of the troops, ships, or aircraft in a war situation. She points out a similar word tactics which are tools to achieve the success of strategies. These two words, used interchangeably mean planning, competition, conscious manipulation, and movement toward a goal. In a problem solving situation, it would imply "using a plan, step or

conscious action toward achievement of an objective." Oxford continues to expand on this definition by stating that "learning strategies are specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferrable to new situations."

Weinstein and Mayer in Witrock (1986) have coined one definition of learning strategies as "behaviors and thoughts that a learner engages in during learning and that are intended to influence the learner's encoding process." They go on to state various learning strategies that could be used with learners. Nisbet and Shucksmith (1987) define learning strategies simply as "the processes that underlie performance on thinking tasks."

They go on to explain that "strategies are more than simple sequences or agglomerations of skills; they go beyond the 'strings' or routines advocated in some study manuals. They are almost always purposeful and goal-oriented, but they are perhaps not always carried out at a conscious or deliberate level. They can be lengthy or so rapid in execution that it is impossible to recapture, recall, or even be aware that one has used a strategy." They move toward a metacognitive approach to strategy use and learning. They believe that since not all learning strategies are equal in terms of usability and ease of acquisition, there exists a hierarchy of strategies which are related to metacognition, or knowledge of one's own mental processes.

Masters, Mori, and Mori (1993) move toward a definition of cognitive strategies rather than the term learning strategies. They refer to a definition of cognitive strategies coined by Alley and Deshler (1979) as "techniques, principles, or rules that will facilitate the acquisition, manipulation, integration, storage, and retrieval of information across situations and settings." They go on to say that "cognitive strategies are a fundamental part of the process of acquiring knowledge as well as the tool skills of reading, writing, speaking, listening, note taking,

questioning, vocabulary acquisition, time management, reasoning, problem solving, and memorization."

From reading through the definitions coined by researchers in the area of learning strategies, it would be appropriate to state that learning strategies, in essence, are actions taken by the learner to assist in learning more effectively.

2.3.1 Types of Learning Strategy

Learning strategies were defined as systematic plans, thoughts, affect and/or behaviour that are consciously invoked by learners to facilitate knowledge acquisition, and to manage and regulate the information and the learning process. Cognitive learning strategies are associated with the actual processing of information coming from the environment, to transform it into knowledge. Therefore, cognitive strategies directly promote effective learning and academic achievement. Metacognitive strategies on the other hand, influence information-processing indirectly by regulating and supporting the cognitive information processing strategies (Hawley 2006; Lopez 2001; Weinstein & Hume 1998).

Researchers have identified the following general cognitive learning strategies: attention, rehearsal, elaboration and organization. Meta-cognitive strategies such as planning, monitoring and self-evaluation, as well as affective, and motivational and support strategies (such as anxiety management), which help to start and maintain the learning effort, have also been identified (Lopez 2001; Monteith 2010; Weinstein & Hume 1998).

According to Hartley (1998) and Woolfolk (2010), learning strategies are conceptualized in terms of the levels at which learners tend to reinforce the natural information-processing

activities, namely by using the deep approach or the surface approach, or as processes that occur in stages in certain parts of the brain.

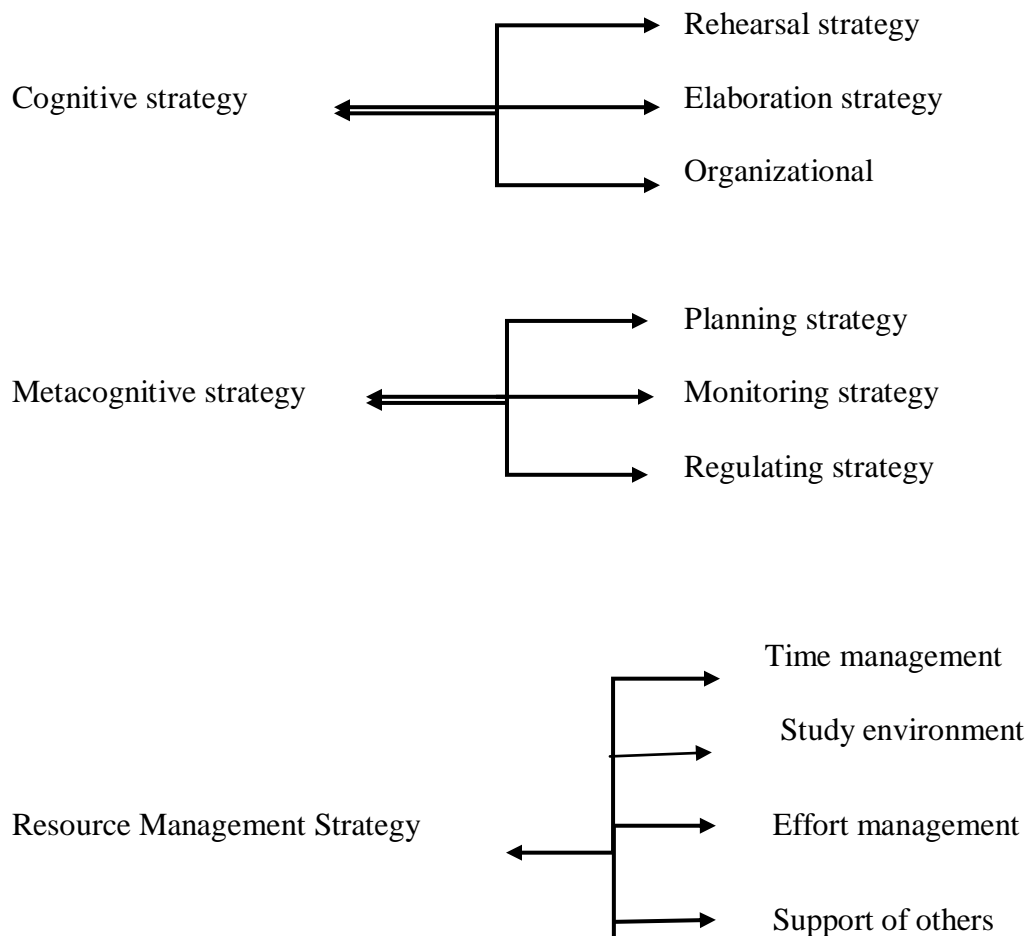
Recent years have witnessed an increased interest in comprehension strategies. Modern cognitive researchers have started building on the knowledge gained from earlier strategy instruction research to demonstrate that instruction in reading-comprehension is not only necessary, but it is also possible. Reading-comprehension is regarded as the core of effective learning and development, and is the most essential element in the education of the child. Therefore, finding ways of teaching learners comprehension strategies so as to enable them to process texts in a manner that will facilitate understanding, retention and retrieval of information is considered to be crucial (Mayer 2001; Van Keer&Verhaegde 2005).

2.3.2 Model of Learning Strategy

One such way to empower students is to focus on learning strategies. Learning strategies can be defined as thoughts and behaviors intended to influence the learner's ability to select, acquire, organize, and integrate new knowledge (Weinstein & Mayer, 1986). Learning strategies are designed to teach learners how to learn (Jonassen, 1985). Effective learning involves knowing when to use a specific strategy, how to access that particular strategy, as well as when to abandon an ineffective strategy (Jones, Sullivan, Sederburg, Olge, & Glynn-Carr, 1987). According to Jones et al. (1987), both less proficient and more proficient students are able to develop effective learning strategies. Learning strategies are important in today's lifelong learning environment. Today's society is facing a technological revolution where technology and information are constantly changing.

According to Pintrich (1988), a variety of taxonomies are available for describing and classifying students' learning strategies including those developed by Dansereau (1985), Pressley (1986),

Weinstein and Mayer (1986), and McKeachie, Pintrich, Lin, and Smith (1986). Dansereau (1985) developed a theoretical framework for learning strategies that emphasized primary and support strategies. The primary strategies focused on learning strategies needed for text-based materials and support strategies needed for developing a mental environment. Although Dansereau provided a clear framework, the primary strategies were isolated to text-based applications. Pressley (1986) examined goal specific, monitoring, and higher order learning strategies. While Pressley investigated the use of specific strategies, he did not provide a clear, conceptual framework to apply these learning strategies to other learning environments. The taxonomy developed by Weinstein and Mayer (1986) outlined learning strategies from a cognitive perspective. This cognitive approach identified specific strategies and methods available to learners to assist them with selection, acquisition, construction, and integration of knowledge (Weinstein & Mayer, 1986). In 1986, McKeachie et al. incorporated elements of several learning models, including the cognitive approach established by Weinstein and Mayer (1986), into a taxonomy of learning strategies. The taxonomy proposed by McKeachie and others encompasses the cognitive, metacognitive, and resource management aspects of learning.



Classification of Learning Strategy

According to McKeachie, Pintrich, Lin, and Smith, (1986) and Weinstein and Mayer (1986), cognitive strategies are important for understanding how information is processed and encoded in a learning environment. Metacognitive strategies allow a student to monitor his/her performance through planning, monitoring, and self-regulation (McKeachie et al., 1986). Resource management strategies assist the student in managing the learning environment and available resources (McKeachie et al., 1986). The taxonomy is a clear, concise, and comprehensive model that provides the theoretical framework for this study and identifies

general learning strategies and specific learning tactics that may be examined in education environment.

Cognitive Strategies

The cognitive component of McKeachie's taxonomy focuses on the methods by which students actively process information and structure this information into memory (Weinstein & Mayer, 1986). This active constructive process allows the learner to interpret information and connect it to existing cognitive structures (Schuemer, 1993). Cognitive learning strategies also involve those that work directly on the incoming information while it is being transformed into knowledge. They affect the manner in which learners select, acquire, organize or integrate new information so that it can become meaningful and applicable as knowledge. At the required time the strategies ensure the retrieval of knowledge from where it was stored as long-term memory, so that it can be applied in an individual's life. Examples of cognitive learning strategies where the learner can engage in the stimulus-to-knowledge transformation include attention, rehearsal, elaboration and organization (Alderman 1999; Kruger & Adams 2010; Mayer 2008; Monteith 1998).

1. Attention

At the onset of the learning process, learners have to pay attention to relevant environmental stimuli. Attention means screening out some external stimuli and becoming focused on the information one has selected for processing. It also refers to the "concentration of mental resources on a particular process" (Kellogg 2003; Woolfolk 2010). Examples of strategies that help learners to focus their attention on appropriate features of the learning tasks include the

creation of expectation, or making prediction, underlining, or highlighting the relevant information in a different colour or boldface (Lopez 2001; Woolfolk 2010).

Once attention has been paid to the relevant features of the task, the learner must encode the material to ensure that the information is retained and later retrieved. The simplest strategies for the restructuring of information are the repetition strategies or rehearsal strategies (Lopez 2001).

2. Rehearsal strategies are employed by learners to remember material using repetition (Olgren, 1998). Specific rehearsal tactics include “repeating the material aloud, copying the material, taking selective verbatim notes and underlining the most important parts of the material” (Weinstein & Mayer, 1986). In a study conducted on adult learners in distance education, Bemt and Bugbee (1990) examined specific tactics such as underlining/highlighting, memorizing material, and mentally rehearsing important ideas. According to Kellogg (2003), rehearsal involve deliberate effort by learner of trying to keep information in the STM by repeating it. Alderman (1999) distinguish between maintenance rehearsal and elaborative rehearsal and differentiates between basic rehearsal and complex rehearsal.

On the one hand, maintenance rehearsal, like basic rehearsal for tasks, is conceptualized as the recycling or repetition and recitation of information in order to keep it within the STM for later recall. It is associated with rote-learning and often with no understanding of the learning content, because it is ineffective in encoding and storing information. Nonetheless, it helps learners to acquire the basic knowledge on which more advanced knowledge is built (e.g., sequencing events and items, multiplication tables, and letters of the alphabet). Examples of the maintenance rehearsal strategies are copying verbatim notes, and repeating or reciting information (Van der Vyver 2000).

On the other hand, elaborative rehearsal is regarded as a relatively more effective strategy for the facilitation of maintenance, and for the understanding of acquired information. What is implied is that in the latter strategy, the learner participates more actively by making internal connections between the information being processed and their prior knowledge which exists in the LTM as he/she is rehearsing. As a result of the linkage, the newly gained information acquires a deeper meaning and becomes more understandable, easy to retain in, and to retrieve from the memory through this elaboration process (Eysenck 2001; Kellogg 2003).

Examples of elaborative rehearsal are the re-reading of text, using mnemonic devices, and highlighting, underlining and spontaneous note-taking, or the summary of notes. In all of these examples, learners actively pay attention to the salient features of the learning material before transferring it to the STM to be analysed.

3. Elaboration is the process by which the learner builds an internal connection between what is being learned and previous knowledge. Specific tactics include paraphrasing, summarizing, creating analogies, generative note-taking, and question answering (McKeachie et al., 1986; Weinstein & Mayer, 1986). Miller (1997b), determined that 87% of the students in distance education courses delivered by videotape utilized an elaborative strategy by taking notes while viewing the videotape. Furthermore, Miller (1997a) determined that students who took notes were more likely to earn an “A” in their course. Elaboration for complex tasks or deeper-level processing, diagrams, paraphrasing, summarising, generative note-taking, analogies, comparing and contrasting, as well as problem-solving are some of the elaboration strategies teachers can use to integrate the new information with knowledge already stored in the learners’

LTM so that they can gain a deeper level of understanding of the information (Anderson 2000; Lopez 2000).

4. Organization is the process by which the learner organizes and builds connections with the information received in the learning environment (Olgren, 1998). Specific tactics associated with organization include the process of selecting the main idea through outlining, networking, and diagramming the information (McKeachie et al., 1986; Weinstein & Mayer, 1986). According to Kruger and Adams (2010), strategic learners also restructure information into another format that is easier to understand by using organization strategies. Thus, the new information is made to fit into, and becomes part of the existing network or knowledge-schema in the LTM, and is made easily accessible for later recall. Examples of organization for basic tasks are chunking, clustering and ordering (Lehman et al. 1998). Popular strategies for the organization of information for complex tasks include functions such as outlining, identifying the main ideas in a text, creating concept hierarchies, maps and line diagrams. (Anderson 2000; Gunning 2005; Van Loggerenberg 2000).

According to Alderman (1999), the cognitive strategies that are suitable for primary school learners include: summarization, mental imagery, story grammar, question answering and prior knowledge activation.

Metacognitive Strategies

The metacognitive component of the theoretical model focuses on the skills students use to plan their strategies for learning, to monitor their present learning, and to estimate their knowledge in a variety of domains (Everson, Tobias, & Laitusis, 1997). Meta-cognition refers to an individual's thoughts, knowledge and beliefs about his/her own cognitive processes, as well as about his or

her personal, contextual and task characteristics (Mayer 2008; Woolfolk 2010). The purpose of such strategies is to improve self-regulation by encouraging students to test their understanding (Pace, 1985, as cited in Jonassen, 1985). The metacognitive strategies outlined by McKeachie et al. (1986) are similar to those of Everson et al. (1997) and include planning, monitoring, and regulating.

1. Planning includes such tactics as setting goals, skimming the material, and generating questions (McKeachie et al., 1986). Planning involves the advance decision-making about physical and mental activities that are needed to meet one's performance goals, thus taking control whilst anticipating the outcomes. Planning activities include task analysis, goal-setting and a deliberate selection of suitable conditions and activities for learning (Sitko 1998). To be successful, the plans have to be monitored all the time.

2. Monitoring and regulating are activities that utilize self-regulation (McKeachie et al., 1986). Monitoring involves the process by which learners check themselves for comprehension of knowledge or skills (Weinstein & Mayer, 1986). This process of self-monitoring has been found to contribute to improved acquisition, generalization, and transfer of knowledge (Wang & Lindvall, 1984, as cited in McCombs, 1988). Examples of this self-monitoring include self-testing, attention-focus, and employing test-taking tactics (McKeachie et al., 1986). Regulating involves such processes as adjusting reading rate, rereading, reviewing, or utilizing test-taking tactics.

Resource Management Strategies

The resource management strategies concern the quality and quantity of the task involvement (McKeachie et al., 1986). Strategies include resource management, study environment management, effort management, and support of others (McKeachie et al., 1986). Resource

management involves the process of developing well-defined goals and scheduling the course to obtain the best results. Scheduling is the process by which the student defines a specific time or creates a daily ritual, a weekly pattern, or some other type of arrangement (Eastmond, 1995).

Study environment management is the development of a setting that is conducive to learning. According to McKeachie et al. (1986), the nature of the setting is as important as the fact that the student recognizes that this particular location is set aside for studying. Thus, the student must designate a defined, quiet, and organized area in which to study.

Effort management is the process by which a learner utilizes tactics such as attribution to effort, mood, self-talk, persistence, and self-reinforcement (McKeachie et al., 1986).

Support of others is the final strategy associated with this taxonomy of learning strategies. Students must learn to utilize this support by seeking help from other students and the instructor (McKeachie et al., 1986).

2.4 Concept of Academic Achievement

In the Longman's Dictionary of Contemporary English (1987), academic means "concerning education, or based on subjects that develop the mind rather than the provision of skills". 'Achievement' is defined as "attainment of success through effort or finishing or carrying out successfully". Academic achievement therefore, mean the attainment of educational success. It is the outcome of education — the extent to which a student, teacher or institution has achieved their educational goals. Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important — procedural knowledge such as skills or declarative knowledge such as facts (Ward, Stoker, & Murray-Ward, 1996).

In practice, academic achievement describes the learner's ability to provide evidence (through assessment processes) that learning and understanding have taken place, and shows the level at which the learning has happened. By demonstrating - in different situations - certain integrated knowledge, skills, values and attitudes, the learner proves that he/she has met clearly defined criteria or learning outcomes (Steyn, Steyn & De Waal 2001).

2.5 Theoretical Framework for the Study

2.5.1 The Social Cognitive Learning Theory

The social cognitive learning theory that was conceptualized by Albert Bandura (Bandura 1977) is referred to as a major shift from his original behaviorist stance. The behaviorist theory with its stimulus-response-consequence model describes learning mainly as a learner's response to environmental stimuli and the probability of behaviour increase if the behaviour is reinforced.

On the other hand, the cognitive theory learning depends on mental structures and processes.

Bandura's contention is that people's learning behaviour is neither driven solely by factors that reside within them (especially cognitions), nor are they totally controlled by external forces to the extent of passively absorbing and responding to external stimuli without some form of recourse theory (Jahnke & Nowaczyk 1998; Sobel 2001). The social cognitive learning theory is therefore, a merger of the cognitive and the behaviorist learning theories (Jinks & Lorschach 2003; Zimmerman 2000).

The self-efficacy theory is one of the key components of Albert Bandura's broader social-cognitive theoretical framework (Pastorelli et al. 2001; Pintrich & Schunk 2002).

The social-cognitive argument suggests that behaviour is the result of a complex interrelationship among personal, the environmental and the behavioural factors (Martin 2004; Pastorelli et al. 2001).

Within the learning context, reciprocal determinism simply means that people's learning behaviour is neither driven solely by mental processes and other factors residing within the learner, nor is it totally controlled by external forces to the extent of passively absorbing and responding to external stimuli without some form of recourse (Jinks & Lorschach 2003; Schunk 2003; Schunk & Pajares 2003).

Instead, learners are regarded as organisms that actively and pro-actively seek stimulus from the environment and transform it into knowledge using his or her cognitions (Jinks & Lorschach 2003; Chemers, Hu & Garcia 2001; Guillon, Dosnon, Esteve & Gosling 2004).

According to Pastorelli et al. (2001) and Woolfolk (2010), the cognitive factors that tend to influence the changes necessary for behaviour that determine one's achievement levels include their personal expectations and perceptions, such as self-efficacy.

In his social cognitive learning theory Bandura (1977) distinguishes between outcome expectations and efficacy expectations.

- i. Outcome expectations

According to Bandura (1977), outcome expectations refer to one's prediction of likely consequences of certain behaviour, not the behaviour itself. For example, a learner who believes that by using learning strategies he or she will perform well in the test and be praised by teachers and parents has positive outcome expectations and he or she will feel motivated. Learners are generally more motivated if they believe that the outcomes of their action are positive than when they expect negative outcomes. They become motivated by positive value or significance placed on the outcomes expected (Mayer 2008).

- ii. Efficacy-expectations

Self-efficacy expectations are based on the individual's belief that he or she possesses certain prerequisite capabilities such as learning strategies, techniques or skills that will enable him or her to execute and accomplish specific courses of action that are required to bring about certain desired levels of performance that exert influence over event that affect his or her life (Bandura 1994).

It can be argued that there is some common ground between self-efficacy beliefs and agency. The description of self-efficacy as a causal agent in academic achievement is implied in its definition as: the capability to execute and accomplish specific courses of action required for bringing about certain desired level of performance. It sounds very similar to the definition of agency as the capability to make intentional choices and acting upon those choices. In the same way, a person bringing about performance that exercises influence over events that affect one's life is not different from another person acting on the choices the make a difference in his or her life.

Learners' academic self-efficacy refers to their belief in how well they can perform learning tasks to confident levels of achievement (Bong 2002; Decker 2000; Pajares & Graham 1999; Salili, Chi-Yuen & Lai 2001; Walker 2003; Zimmerman 2000). Learners will therefore, feel more confident in attempting tasks and activities for which they believe they have the capacity to understand and expect to achieve (Linnenbrink & Pintrich 2003; Pintrich & Schunk 2003; Schunk & Pajares 2003; Zimmerman 2000). In contrast, learners with low self-efficacy beliefs about themselves tend to lack the confidence and courage to attempt task that they feel not capable of.

Researchers insist on distinguishing self-efficacy from other self-personal beliefs (Bong & Clark 1999; Pastorelli et al. 2001; Valentine et al. 2004).

Self-efficacy in relation with other personal and motivational constructs

A compelling reason for providing a clear definition for the self-efficacy construct is the confusing similarity in the operational meanings it shares with an array of other motivational self-beliefs that have been identified and documented such as self-worth, self-esteem, self-concept, causal attributions and outcome expectancy (Bong & Clark 1999; Pastorelli, et al. 2001; Valentine 2004). Of all the self-schemas mentioned here, self-concept has apparently been the most extensively researched (Crowe 2004).

Bong and Clark (1999) caution researchers to be wary of any conceptual or methodological issues of different constructs that may confound the outcomes of the study of self-efficacy and its implication on educational practice. Among the similarities that these self-percepts share is the impact they are all believed to have on an individual's performance due to their common property of being a causal agent to behaviour and achievement, such that changes in any of them will lead to changes in an individual's subsequent behaviour and performance levels (Bong 1999; Valentine et al. 2004).

Such a similarity may lead not only to a confusion of the concepts, but also hinder how each one of them is observed and measured. Ultimately, it will be difficult to verify the results of research and to apply them in the classroom (Bong & Clark 1999; Pastorelli et al. 2001). In the ensuing paragraphs, the definition of the other self and motivational constructs will be provided so as to show how they differ from the self-efficacy construct.

i. Self-esteem

According to Valentine et al. (2004), self-esteem refers to a person's global and more affective evaluation of his or her self-worth, or his/ her positive or negative opinion and feeling regarding his/her accomplishments and who he/ she is (Pastorelli et al. 2001; Schunk, Pintrich & Meece

2008). It is not only one's judgment of one's capability, which efficacy perceptions are about. As such, it comprises evaluations of the descriptive parts of the self- concept (Pintrich&Schunk 2002).

ii. The self-concept

An individual's self-concept refers to his/her more global understanding of whom and what he or she is, based on life experiences (Schunk et al. 2008). It contains certain assumptions based on self-evaluations and appraisal, which enable people to make predictions about themselves (Schunk & Pajares 2003).

Closely related to self-efficacy and other self-beliefs are attributions and perceived control.

iii. Causal attributions

Causal attributions refer to an individual's understanding of causal relationships between events, and recognizing one's role (versus the environment) in determining the outcomes. In school situations, this comprises beliefs held by a learner about the causes of his/her learning and performance failures and successes, that is, whether the causes for his/her success or failure resides within or outside his or her being (Chan & Moore 2006).

iv. Perceived control

An individual's sense of control (e.g. due to effort) over factors that influence his/her performance such as abilities (Chan & Moore 2006; Schunk & Pajares 2003).

In addition to the definition, self-efficacy judgments can be described as an integral part of a person's self-esteem, which in turn is part of the global self concept (Efklides et al. 2001; Schunk & Pajares 2003; Zimmerman 2000). It involves causal attribution in terms of how they perceive themselves as having control over their fate. It is also related to outcome expectations (Valentine et al. 2004).

To clearly conceptualize and operationalise the definition of self-efficacy beliefs, some key properties have been identified as indicators of this abstract variable, and also help to distinguish the self-efficacy phenomenon from the other self-beliefs mentioned above, especially the self-concept (Linnenbrink & Pintrich 2003; Schunk & Pajares 2003).

First, whereas self-esteem and self-worth refer to an individual's emotional reaction to actual accomplishment, regarding the definition of self-efficacy, Bandura (1994) posits that self-efficacy is judgment of perceived cognitive ability "to organise and execute necessary action". Thus, it assesses specific actions in the light of targeted outcomes or "designated levels of performance". Researchers concur that, in this way, self-efficacy is associated with future functioning and is related to goal setting and goal-attainment since learners only assess themselves before the actions they consider themselves capable of performing (Guillon et al. 2004; Pintrich & Schunk 2002; Walker 2003).

In the second place, the self-concept (and to some extent self-esteem), though also competence-related, it is a more global view of the self. It is a complex combination of cognitive and affective aspects relating to an individual's evaluation of the environment. Its cognitive aspects include the description and evaluation of the self. The affective aspects include feelings that ensue after the self-evaluation exercise. It does not necessarily add to the prediction of particular learning outcomes (Pintrich & Schunk 2002; Valentine et al. 2004; Woolfolk 2010).

To exemplify the distinction between the two concepts, several researchers (Bong 2002; Pintrich & Schunk 2002; Schunk 2003) point out that a learner who has a positive self-concept can view him/herself as being generally "good" academically. Another learner can feel more self-efficacious in one domain (Art) and not in another (Science); or they may feel capable about a specific aspect of the domain (Addition) and not others (Division).

The general consensus among theorists and researchers is that, by treating human capability as differentiated and multifaceted, the self-efficacy theory allows for more accurate measurement and judgment of the capabilities in question (Bong 2002; Pastorelli et al. 2001; Valentine et al. 2004).

According to Bong and Clark (1999) as well as Walker (2003), learners do not necessarily gauge their efficacy by comparing themselves with their peers. The authors also assert that the learners' efficacy assessment does not necessarily encompass affective reactions.

In contrast, Bong and Clark (1999) insist that self-concept has a deeper cognitive aspect to it, which is involved during its formation when an individual's attributes and abilities are compared with some standards or norms. Such comparison and competence-judgment is invariably followed by affective reaction towards the self.

Zimmerman (2000) contends that, unlike the relatively more stable self-concept, a person's self-efficacy tends to fluctuate and be less stable because of the effects of other personal as well as environmental conditions surrounding the area of designated performance.

2.5.2 Learning Theories

Learning theories describe how information is absorbed, processed, and retained during learning. Cognitive, emotional, and environmental influences, as well as prior experience, all play a part in how understanding, or a world view, is acquired or changed, and knowledge and skills retained (Illeris, 2004; Ormrod, 2012)

Behaviorists look at learning as an aspect of conditioning and will advocate a system of rewards and targets in education. Educators who embrace cognitive theory believe that the definition of learning as a change in behavior is too narrow and prefer to study the learner rather than the environment, in particular, the complexities of human memory. Humanists emphasize the

importance of self-knowledge and relationships in the learning process. Those who advocate constructivism believe that a learner's ability to learn relies to a large extent on what he already knows and understands, and that the acquisition of knowledge should be an individually tailored process of construction.

Behaviorism, as a learning theory, is based on a change in knowledge through controlled stimulus/response conditioning. This type of learner is dependent upon an instructor for acquisition of knowledge. The instructor must demonstrate factual knowledge, then observe, measure, and modify behavioral changes in specified direction. This type of learning is a conditioned response or memorization of facts, assertions, rules, laws, and terminology. The correct response is achieved through stimulation of senses. The focus of intelligence development is visual/spatial, musical/rhythmic, and bodily/kinesthetic intelligence. The purpose in education is to help a learner adopt knowledge from an instructor through use of the learner's senses. This learning goal is the lowest order learning: factual knowledge, skill development, and training. The term "behaviorism" was coined by John Watson (1878–1959). Watson believed that theorizing thoughts, intentions or other subjective experiences was unscientific and insisted that psychology must focus on measurable behaviors (Good & Brophy, 1990). For behaviorism, learning is the acquisition of a new behavior through conditioning.

Cognitivism, as a learning theory, is the theory that humans generate knowledge and meaning through sequential development of an individual's cognitive abilities, such as the mental processes of recognition, recollection, analysis, reflection, application, creation, understanding, and evaluation. The Cognitivists' learning process is adoptive learning of techniques, procedures, organization, and structure to develop internal cognitive structure that strengthens synapses in

the brain. The learner requires assistance to develop prior knowledge and integrate new knowledge. The purpose in education is to develop conceptual knowledge, techniques, procedures, and algorithmic problem solving using Verbal/Linguistic and Logical/Mathematical intelligences. The learner requires scaffolding to develop schema and adopt knowledge from both people and the environment. The educators' role is pedagogical in that the instructor must develop conceptual knowledge by managing the content of learning activities. This theory relates to early stages of learning where the learner solves well defined problems through a series of stages.

Cognitive theories grew out of Gestalt psychology, developed in Germany in the early 1900s and brought to America in the 1920s. The German word *gestalt* is roughly equivalent to the English configuration or pattern and emphasizes the whole of human experience (Yount, 1996) Over the years, the Gestalt psychologists provided demonstrations and described principles to explain the way we organize our sensations into perceptions (Myers, 2008).

Gestalt psychologists criticize behaviorists for being too dependent on overt behavior to explain learning. They propose looking at the patterns rather than isolated events (Merriam, 2007). Gestalt views of learning have been incorporated into what have come to be labeled cognitive theories. Two key assumptions underlie this cognitive approach: that the memory system is an active organized processor of information and that prior knowledge plays an important role in learning. Cognitive theories look beyond behavior to consider how human memory works to promote learning, and an understanding of short term memory and long term memory is important to educators influenced by cognitive theory (Lilienfeld, Steven, Namy, Woolf, 2010). They view learning as an internal mental process (including insight, information processing,

memory and perception) where the educator focuses on building intelligence and cognitive development (Hergenhahn & Olson, 1997). The individual learner is more important than the environment.

Once memory theories like the Atkinson-Shiffrin memory model (Atkinson & Shiffrin, 1968) and Baddeley's working memory model (Baddeley & Hitch, 1974) were established as a theoretical framework in cognitive psychology, new cognitive frameworks of learning began to emerge during the 1970s, 80s, and 90s. Today, researchers are concentrating on topics like cognitive load and information processing theory. These theories of learning play a role in influencing instructional design (deJong, 2010). Cognitive theory is used to explain such topics as social role acquisition, intelligence and memory as related to age.

2.6 Review of Empirical studies

According to Altunsoy, Çimen, Ekici, Atik, and Gökmen (2010), studies have usually focused on only one factor, and most of them have examined especially whether the level of academic self – efficacy differs according to gender. Moreover, recent studies have also confirmed that academic self – efficacy is related to a lot of variables. Altunsoy et al. (2010) assessed the factors that influence biology teacher candidates' academic self – efficacy beliefs. They found that biology teacher candidates' academic self – efficacy levels were above the medium level and a significant difference between students' academic self – efficacy levels and their gender (in favor of males) was observed. There was also a significant difference between academic self – efficacy levels and students' grade level. It was also determined that the level of academic self – efficacy levels changed most under the influence of general academic achievement. Similarly, Fettahlioğlu and Ekici (2011) investigated the effect of science teacher candidates' academic self – efficacy

beliefs towards their science motivation. They detected that 20% of teacher candidates' total variance related to their motivations towards science was explained with the academic self – efficacy belief. They also observed that prospective teachers had medium level academic self – efficacy beliefs. In recent studies, researchers dealt with psychological perspective of academic self – efficacy beliefs. For instance, Vasile et al. (2011) determined that there is a direct correlation between academic self –efficacy and cognitive load within the academic environment. Shams, Mooghali, Tabebordbar, andSoleimanpour (2011) investigated the mediating role of academic self – efficacy in the relationship between the personality traits and mathematics performance. They confirmed that there is a mediating role of academic self – efficacy between five factor model and math performance. In a similar study implemented by Ferla, Valcke and Cai (2009), detected that students' academic self-concept strongly influenced their academic self – efficacy beliefs and academic self-concept was a better predictor (mediator) for affective motivational variables, while academic self – efficacy was the better predictor (mediator) for academic achievement.

The roles of self-efficacy as motivator, predictor, mediator and self-regulator of behaviour have received support from a growing body of research in various domains of human behaviour and achievement. In learning situations academic self-efficacy is hypothesized to have both a direct and indirect effect on learning achievement situations as it sometimes operates in concert with other variables that influence behaviour and achievement (Alderman 1999; Decker 2000; Taylor 2002). Self-efficacy sustains motivation in learners and give them the energy to engage in actions that lead to enhanced achievement levels (Smith 2000; Zimmerman 2000; Schunk & Pajares 2003).

Zimmerman and Martinez-Pons (1986) reported that students' self-reported SRL strategies were positively correlated with their standardized testing performance. In another study, Zimmerman and Martinez-Pons (1988) noted that high achieving students used more learning strategies and were more likely to seek help from instructors than low achieving students. Students who needed help the most were least likely to seek help. Zimmerman and Martinez-Pons (1988) concluded that successful students tend to be aware of how well they have done on a test even before getting it back from the instructor, indicating their tendency to self-monitor performance.

Chamot and El-Dinary (1999) investigated elementary school children's strategy use while learning a foreign language and noted a significant difference in the use of strategies depending on the context of learning tasks. The number of strategies used to complete reading tasks was twice as many as that used to complete writing tasks. Strategies favored in the context of reading were making inferences, predictions, elaborations, language knowledge, translating, and summarizing. The only strategy favored in the context of writing was planning.

In a study conducted on adult learners in distance education, Bemt and Bugbee (1990) examined specific tactics such as underlining/highlighting, memorizing material, and mentally rehearsing important ideas. No significant differences were found between students at different achievement levels and their reported use of these specific tactics (Bernt & Bugbee, 1990). In addition, the high achievement students reported the lowest percentage of memorizing material that was not understood (Bernt & Bugbee, 1990).

Bernt and Bugbee (1990) determined that elaboration strategies were used by 50-75% of the students in educational environments at different achievement levels; however, no significant differences were found between failing students, low passers, and high passers on specific tactics

such as trying to see how material applies to work situations, relating new material to familiar ideas, and translating material into their own words.

In the research study conducted by Miller (1997b), 21.2% of the distance education students in videotaped situations employed organizational strategies by outlining class notes. However, Bernt and Bugbee (1990) found no significant differences between failing, low passing, and high passing students who reported very frequently or almost always organizing/condensing notes and summarizing with charts, diagrams, and outlines.

According to Bernt and Bugbee (1990), 89% of the high passing students reported very frequently or almost always skimming each chapter before reading it. Conversely, only 35% of the failing students and 29% of the low passing students reported using this tactic (Bernt and Bugbee, 1990).

In a study conducted by Bernt and Bugbee (1990), 72-75% of students reported very frequently or almost always studying in a quiet place without interruption. However, no significant differences in achievement were attributed to environment. It is interesting to note that Bernt and Bugbee (1990) determined that high achievement students did not spend more time studying. The study by Miller (1997a) concurred with this finding by determining that students receiving "A's" also did not spend more time studying.

In a study conducted by Miller (1997b), only 6.8% of the students studied with one other person, only 4.5% studied with a group of students, and only 18.9% of students called the instructor in a videotaped distance education course. However, Miller (1997a) determined, that students who called the instructor were more likely to earn an "A" in the videotaped distance education course. Filcher and Miller (2000) in a study on learning strategy for distance education students concludes that in terms of specific cognitive strategies, note-taking was the only tactic found to

distinguish between achievement levels. Otherwise, no significant differences were found in the literature between student achievement levels based on students' level of use of specific tactics.

2.7 Summary

The research is designed to Relationship among academic self-efficacy, learning strategies and academic achievement among junior secondary school students in Zaria, Kaduna state, Nigeria. Learning strategies is the "tricks" learners used on how to help them remember things better or to do tasks more efficiently. It also refers to behaviors and thoughts that a learner engages in during learning and that are intended to influence the learner's encoding process. Various types of strategies exist; Cognitive learning strategies are associated with the actual processing of information coming from the environment, to transform it into knowledge. Therefore, cognitive strategies directly promote effective learning and academic achievement. Cognitive strategies are important for understanding how information is processed and encoded in a learning environment. Metacognitive strategies influence information-processing indirectly by regulating and supporting the cognitive information processing strategies and allow a student to monitor his/her performance through planning, monitoring, and self-regulation. Resource management strategies assist the student in managing the learning environment and available resources. Self-efficacy perceptions (including academic self-efficacy) are defined as personal beliefs about, or judgment of one's capability to perform behaviour required for successfully bringing about specific outcomes. Studies have shown that some specific learning strategies have a positive relationship with student's achievement. Self-efficacy was also found to correlate positively with student's achievement.

For many the causes of learners' poor or good performance are the customary reasons of factors of mainly contextual nature, such as a lack of resources, the lack of parental support, teachers'

incompetence and ineffective school and teaching approaches but hardly does it occur to some that the learning strategy used by students to learn is also a major factor. This is one of the area this research intends to make it contribution to existing literature.

CHAPTER THREE METHODOLOGY

3.1 Introduction

The methodology of the study includes the research design, sample and the procedure for selecting the sample. Furthermore, it describes the research instruments, how data were obtained as well as the statistical method used in analyzing it.

3.2 Research Design

This study made use of Correlational design. This design was chosen because Shaughnessy, Zechmeister and Jeanne (2011) explain that correlational design is often used when researcher want to assess the strength of relationship between independent and dependent variable(s). It is often achieved by using a predetermined set of questions that are given to a sample - a representative sample, that is, one that is representative of the larger population of interest. Outcome can be used to correlate between the variables.

3.3 Population of the Study

The population of this study include all JSS3 Government Secondary Schools Students in Zaria. The following table shows the population characteristics.

Table 1: Population of the study

Schools	Population	
	Male	Female
Govt. Junior Sec. Sch. Aminu	301	96
Govt. Junior Sec. Sch. K/Doka	372	228
Alhudahuda College, Zaia	200	-
Govt. Girls Sec. Sch. Kongo	-	150
Govt. Sec. Sch. Kwangila	120	80
Demonstration Sec. Sch. Samaru	147	122
Total	1,140	676

Source: School administrators

3.4 Samples and Sampling Technique

A total sample size of three hundred and seventeen (317) students drawn from a total number of JSS3 students of 1,816 were used for the study. This was done using Krejci and Morgan (1970) table for determining sample size of a given population. The simple random sampling techniques was used for this study. The essence was to give all the schools and respondents equal chances of participating in the study. The following is a table showing the sample distribution.

Table 2: samples for the study

Schools	Sample		Total
	Male	Female	
Govt. Junior Sec. Sch. Aminu	52	17	69
Govt. Junior Sec. Sch. K/Doka	65	40	105
Alhudahuda College, Zaia	35	-	35
Govt. Girls Sec. Sch. Kongo	-	26	26
Govt. Sec. Sch. Kwangila	21	14	35
Demonstration Sec. Sch. Samaru	26	21	47
Total	199	118	317

Source: Author's analysis of JSS2 students' population 2014.

3.5 Instrumentation

The instruments used in this study were two questionnaires and achievement test. Both intended to seek information on the basic characteristics that is reflected on the variable being tested.

3.5.1 Academic self-efficacy Questionnaire

Academic self-efficacy questionnaire developed by Zimmerman, Bandura, & Martinez-Pons (1992) was used for data collection. It consists of eleven items that the respondent may need to show how much confidence he/she is having to them. The statements are rated on a five points scale. No Confidence at all=1, Very little confidence=2, Some Confidence=3, Much Confidence=4, Complete Confidence=5. Categorization of scores; highest possible score = 55 and least score =11. >20 =no confidence, score 21-40 = some confidence; 41-55 = high confidence.

3.5.2 Cognitive Learning Strategy Questionnaire

This questionnaire measures different learning strategy which is the various behaviors students used to acquire, store and retrieve information in order to achieve stated academic target. The instrument was adapted from the work of Pintrich and DeGroot (1990) on motivational and self-regulated learning components of classroom academic performance. It consists of 14 items. The instrument was structured on a five points likert scale of strongly agreed=5, agreed=4, Undecided=3, disagree=2, and strongly disagree=1. Item 1-4 measures rehearsal, 5-10 measures elaboration and 11-14 measures organization.

3.5.3 Academic Achievement Test

This test was developed to assess students' academic achievement. It measures their achievement in English language and Mathematics. The test consisted of twenty-five objectives questions for each subject and each correct answer was given 2 marks (2x50=100mks). The instrument was self-created based on JSS3 syllabus. Categorization of scores; highest possible score = 100 and least possible score is 0. Score < 39 = fail; 40-49 = pass; 50-59 = average score; 60+ = high score.

3.6 Validity and instrument

The instruments for data collection were in line with the objectives of the study. To ensure its validity, the researcher presented it to the researcher's supervisors and other experts in the department of psychology and counselling, Ahmadu Bello University, Zaria for input and corrections. Through this, all ambiguous areas were identified and amended. This process of validation agrees with the views of Kerlinger (1986) who explains that validation by experts or specialist in the field is an effective method for content validation of research instruments.

3.7 Reliability of instrument

The instruments used for the study were pilot tested using fifty JSS3 students of Government Day Secondary School Bomo. This school was not part of the study sample. Split half technique was used to pilot the instrument. The data gotten from the pilot study were subjected to statistical analysis for the purpose of reliability co-efficient. The split half reliability was used to test the instruments and a summary Guttman Split-Half Coefficient of .701 and .778 was obtained for learning strategy questionnaire and academic self-efficacy questionnaire respectively. Creswell (2002) explains that an instrument with a reliability coefficient of .70 is considered acceptable in most social sciences environment.

3.8 Procedure for data collection

Before collecting data for the study, the researcher obtained an introductory letter from the department of Educational Psychology and Counselling, Ahmadu Bello University Zaria to the principal of the sampled secondary schools for approval to distribute questionnaire. Upon receiving permission from the school authority, three research assistants were involved and efforts were made to ensure complete retrieval of all instruments distributed. The research assistants were briefed before the commencement of administering the instrument, and the data collection took four days to be completed.

3.9 Procedure for data analysis

Data successfully retrieved were subjected to statistical analysis in order to test the hypotheses and answer research questions raised for the study. Descriptive statistics of frequency/percentages were used for the demographic data while mean and standard deviation were used to respond to research questions. Pearson correlation was used to test H_{01} and H_{02} . Retaining or rejecting a given null hypothesis was made at the .05 level of significance.

CHAPTER FOUR RESULT AND DISCUSSION

4.1 Introduction

The major goal of this study was to assess the Relationship of academic self-efficacy, learning strategies and academic achievement among junior secondary school students in Zaria, Kaduna state, Nigeria. To achieve this, 317 were randomly sampled and the same number of questionnaires structured in a five points Likert format were produced and administered to students for data collection and all were filled and returned, credit to the meticulous effort of research assistants. Therefore, the collected five-point response data and academic achievement test results were sorted and analyzed statistically with the help of Statistical Package for Social Sciences (IBM SPSS v22). Descriptive statistics was used for demographic characteristics and the research question while Pearson correlation was used for the stated hypotheses at the 5% significance level. The results were presented and discussed in the succeeding sections.

4.2 Analysis of Demographic Data

Table 3: frequency and percentage of respondents based on gender

<i>Gender</i>	<i>Frequency</i>	<i>Percent</i>
Male	199	62.8
Female	118	37.2
Total	317	100.0

The above table shows the frequency and percentage of male and female who participated in the study. It reveals that 199 representing 62.8% of the respondents were male while 118 representing 37.2% were female.

4.3 Analysis of Research Questions

research questions were asked in the cause of this study, the following tables provide response to the questions raised.

Research Question one: What is the predominant learning strategy used by JSS students?

Table 4: Mean response on predominant learning strategy used

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>
Rehearsal	317	17.584	2.351
Elaboration	317	25.353	3.649
Organization	317	17.555	2.352

The above table examine differences in learning strategies use by JSS3 students in Zaria. The result suggests that there is a difference in learning strategies used by students in Zaria metropolis. From the result as shown in the table, rehearsal with a mean response of 17.584 and standard deviation of 2.351 is the predominantly used learning strategy by the students in Zaria. Other strategies such as elaboration and organization were used at equal measure by students as the mean response for the two strategies were not different from each other.

4.4 Hypotheses Testing

H01: there is no significant relationship between self-efficacy and academic achievement of JSS students.

Table 5: Correlation between academic self-efficacy and academic achievement.

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Std. Dev</i>	<i>r</i>	<i>P</i>
Self-efficacy	317	45.609	4.512	.119*	.034
Academic performance	317	63.331	7.474		

*. *Correlation is significant at the 0.05 level (2-tailed).*

The above Pearson correlation shows the relationship between academic self-efficacy and academic achievement. It reveals that there is a significant positive relationship between academic self-efficacy and academic achievement, $r = .119$, $p < .05$. This therefore suggests that at the 95% confidence level an improvement in academic self-efficacy will enhance good

academic achievement among students. Therefore, the null hypothesis which states that there is no significant relationship between academic self-efficacy and academic achievement is rejected.

H02: there is no significant relationship between learning strategies and academic achievement of JSS students.

Table 6: Correlation between learning strategies and academic achievement

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Std. Dev</i>	<i>r</i>	<i>p</i>
Academic performance	317	63.331	7.474		
Rehearsal	317	17.584	2.351	.139*	.013
Elaboration	317	25.353	3.649	.130*	.020
Organization	317	17.555	2.352	.147**	.009

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed)

The above Pearson correlation shows the relationship between academic achievement and learning strategy. It suggests a significant positive correlation between rehearsal and academic achievement, $r = .139$, $p < .05$, elaboration and academic achievement, $r = .130$, $p < .05$ and organization and academic achievement, $r = .147$, $p < .05$. This implies that at the 95% confidence level an improvement in the above learning strategies, will lead to better academic achievement. Therefore, the null hypothesis which states that there is no significant relationship between learning strategies and academic achievement of JSS students is rejected.

4.5 Summary of Major findings

The following are summary of major findings of this study;

- i. Result indicates a difference in the learning strategy used by JSS3 students as JSS students used significantly rehearsal strategy than organization and elaboration strategies.
- ii. The study found a significant relationship between self-efficacy and academic achievement of JSS students, $r = .119$, $p < .05$, as improvement in self-efficacy was found to positively influence students' academic achievement.

iii. There is also significant relationship between learning strategies and academic achievement of JSS students, $r = .143$, $p < .05$, as strategies used by students relate to their academic achievement.

4.6 Discussion

The study found a significant relationship between self-efficacy and academic achievement of JSS students suggesting that an improvement in self-efficacy would positively improve students' academic achievement in school. This result agrees with Vasile et al. (2011) who determined that there is a direct correlation between academic self – efficacy and cognitive load within the academic environment. Self-efficacy sustains motivation in learners and give them the energy to engage in actions that lead to enhanced achievement levels (Smith 2000; Zimmerman 2000; Schunk & Pajares 2003). Shams et al. (2011) investigated the mediating role of academic self – efficacy in the relationship between the personality traits and mathematics performance. They confirmed that there is a mediating role of academic self – efficacy between five factor model and math performance. In a similar study implemented by Ferla, Valcke and Cai (2009), detected that students' academic self-concept strongly influenced their academic self – efficacy beliefs and academic self-concept was a better predictor (mediator) for affective motivational variables, while academic self – efficacy was the better predictor (mediator) for academic achievement. Self-efficacy is seen as motivator, predictor, mediator and self-regulator of behaviour and a predictor of various domains of human behaviour and achievement. In learning situations academic self-efficacy is hypothesized to have both a direct and indirect effect on learning achievement situations as it sometimes operates in concert with other variables that influence behaviour and achievement (Alderman 1999; Decker 2000; Taylor 2002).

This study found that there is also significant relationship of learning strategies and academic achievement of JSS students. It suggests that the strategies used by students relate positively their academic achievement. This is in line with the views of other researchers who state that one such way to empower students is to focus on learning strategies. Learning strategies is known as thoughts and behaviors intended to influence the learner's ability to select, acquire, organize, and integrate new knowledge (Weinstein & Mayer, 1986). Learning strategies are designed to teach learners how to learn (Jonassen, 1985). Effective learning involves knowing when to use a specific strategy, how to access that particular strategy, as well as when to abandon an ineffective strategy (Jones, Sullivan, Sederburg, Olge, & Glynn-Carr, 1987). According to Jones et al. (1987), both less proficient and more proficient students are able to develop effective learning strategies as they are important in today's lifelong learning environment. The cognitive component of McKeachie's taxonomy stressed that students actively process information and structure this information into memory (Weinstein & Mayer, 1986). This active constructive process allows the learner to interpret information and connect it to existing cognitive structures (Schuemer, 1993). Cognitive learning strategies also involve those that work directly on the incoming information while it is being transformed into knowledge. They affect the manner in which learners select, acquire, organize or integrate new information so that it can become meaningful and applicable as knowledge. At the required time the strategies ensure the retrieval of knowledge from where it was stored as long-term memory, so that it can be applied in an individual's life.

The study also revealed differences in the learning strategy used by JSS3 students as it was found that JSS students used significantly rehearsal strategy in learning than organization and elaboration strategies although, all the strategies were found to correlate positively with students'

achievements at school. Chamot and El-Dinary (1999) in an investigation of elementary school children's strategy use while learning a foreign language also noted a significant difference in the use of strategies depending on the context of learning tasks. This result did not differ from the findings of Bernt and Bugbee (1990) who stated that elaboration strategies were used by 50-75% of the students in educational environments at different achievement levels. However, the result differs with the view that rehearsal strategies are employed by learners to remember material using repetition (Olgren, 1998). This include repeating the material aloud, copying the material, taking selective verbatim notes and underlining the most important parts of the material" (Weinstein & Mayer, 1986). Kellogg (2003) sees rehearsal as deliberate effort by learner of trying to keep information by repeating or recycling through recitation of information in order to keep it within the STM for later recall but the problem is that it is associated with rote-learning and often with no understanding of the learning content, just that it helps learners to acquire the basic knowledge on which more advanced knowledge is built (like sequencing events and items, multiplication tables, and letters of the alphabet). However, because the learner participates more actively by making internal connections between the information being processed and their prior knowledge which exists in the LTM as he/she is rehearsing, the newly gained information acquires a deeper meaning and becomes more understandable, easy to retain in, and to retrieve from the memory through this elaboration process (Eysenck 2001; Kellogg 2003).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The whole essence of the study was to examine the Relationship of academic self-efficacy, learning strategies and academic achievement among junior secondary school students in Zaria, Kaduna state, Nigeria. The study was structured into five chapters.

Chapter one dealt with the background to the study where rationalization of the study was presented. It was realized that many parents, out of concern for their children's future continue to move them from one school to another in search for 'better' education. Parents argued about what they perceive as the causes of learners' poor performance. For many years it has become customary everywhere to attribute the causes of success or failure of learners to factors of mainly contextual nature, such as a lack of resources, the lack of parental support, teachers' incompetence and ineffective school and teaching approaches but hardly does it occur to many that self-efficacy perceptions and the learning strategy used by students to learn is also a major factor. To create a pathway for the study, three objectives, a research questions were used as guide. The specific hypotheses tested in this study include (i) there is no significant relationship of self-efficacy and academic achievement of JSS students, (ii) there is no significant relationship of learning strategies and academic achievement of JSS students. Chapter two covers conceptual and theoretical framework to the study.

To achieve the above in chapter three, a correlational research design was used because it is often used to assess thoughts, opinions, and feelings. It consists of a predetermined set of questions that is given to a sample - a representative sample, that is, one that is representative of the larger

population of interest and result from the survey can be used to describe the attitudes of the population from which the sample was drawn and allows one to generalize the findings from the sample to the population, which is the whole purpose of survey research. 317 JSS3 students selected from 6 different government secondary participated in the study, they filled three different questionnaires namely; academic self-efficacy questionnaire, learning strategies questionnaire, and academic achievement test.

In chapter four, the data collected or gathered through the process of face to face administration of questionnaire were sorted and subjected to analysis using descriptive statistic for the research question and inferential statistics for the hypotheses and the results were presented in tables in chapter four. At $\alpha = .05$, the results suggest;

- i. The study reveals differences in the learning strategy used by JSS3 students. It suggests that JSS students used significantly rehearsal strategy than organization and elaboration strategies.
- ii. A significant positive relationship between self-efficacy and academic achievement of JSS students implying that an improvement in self-efficacy would positively influence students' academic achievement.
- iii. There was also significant positive relationship between learning strategies and academic achievement of JSS students, also suggesting that the strategies used by students influence positively their academic achievement.

5.2 Conclusion

Based on the aftermath of this study, the resulting conclusions were; there is a difference in the learning strategy used by JSS3 students as majority of the JSS3 students used rehearsal strategy than organization and elaboration strategies. There is a significant positive relationship of self-

efficacy and academic achievement of JSS students as improvement in self-efficacy would positively influence students' academic achievement. There is a significant positive relationship of learning strategies and academic achievement of JSS student implying that the using rehearsal, elaboration or organization strategy can enhance academic performance of students.

5.3 Recommendations

In line with the findings of the studies, the following recommendations were made;

- i. Rehearsal strategy holds more good promises to students' successes when compare to organization and elaboration therefore, efforts should be made by parents and teachers to encourage Rehearsal of learned materials as it encourages retention and consequently academic achievement.
- ii. Students' academic self-efficacy should be enhanced to sustain or improve the level of students' academic achievement. Students should be encouraged by teachers and parents to take away fear and anxiety and believe in themselves that they can achieve academically what they want to achieve.
- iii. Since three cognitive learning strategies positively relate to students' academic achievement, it is recommended that teachers should encourage the students to adopt a strategy they consider suitable and friendly to their academic success.

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Appendix A

Dept. of Ed. Psych& Counselling

Faculty of Education

Ahmadu Bello University

Zaria

Dear Respondent,

Request to Complete Questionnaire

I am a postgraduate student of the above mentioned university conducting a research on “influence of academic self-efficacy and learning strategies on academic achievement among junior secondary school students in zaria metropolis.” Kindly assist by providing honest response to the questionnaire items. Be assured that all information supplied will be treated as confidential.

Thank you for your anticipated co-operation.

SECTION A: DEMOGRAPHIC DATA OF RESPONDENTS

Please tick (✓) or fill in the corresponding box appropriate to your responses.

1. Age (in years):

a. 10-15 []

b. 15-20 []

c. 20-25 []

2. Gender:

- a. Male []
- b. Female []

ACADEMIC SELF-EFFICACY SCALE

Directions: Please indicate how much confidence you have that you could successfully accomplish each of these tasks. Circle the number according to the following 5-point confidence scale.

	No Confidence at all 1	Very little confidence 2	Some Confidence 3	Much Confidence 4	Complete Confidence 5	
How much confidence do you have that you can successfully:						
1	Finish homework assignments by deadlines?	1	2	3	4	5
2	Study when there are other interesting things to do?	1	2	3	4	5
3	Concentrate on school subjects?	1	2	3	4	5
4	Take class notes of class instruction?	1	2	3	4	5
5	Use the library to get information for class assignments?	1	2	3	4	5
6	Plan your schoolwork?	1	2	3	4	5
7	Organize your schoolwork?	1	2	3	4	5
8	Remember information presented in class and textbooks?	1	2	3	4	5
9	Arrange a place to study without distractions?	1	2	3	4	5
10	Motivate yourself to do schoolwork?	1	2	3	4	5
11	Participate in class discussions?	1	2	3	4	5

Appendix B

COGNITIVE LEARNING STRATEGIES QUESTIONNAIRE

The following questions ask about your learning strategies and study skills for this class (social studies). There is no right or wrong answers. Please indicate by ticking how much you agree or disagree with the following statements on how you study in this class.

SA=strongly agree, A=agree, UD=undecided, DA=disagree, SD=strongly disagree

S/n	Statement	SD	A	U	DA	SD
1	When I study for this class, I practice saying to myself over and over					
2	When studying for this class, I read my class notes and the course reading over and over again					
3	I memorize key words to remind me of important concept in in this class					
4	I make list of important terms for this course and memorize the lists					
5	When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.					
6	I try to relate ideas in this subject to those in other courses whenever possible					
7	When reading for this class, I try to relate the material to what I already know					
8	When I study for this course, I write brief summaries of main ideas from the readings and the concepts from the lectures					
9	I try to understand the material in this class by making connection between the readings and the concepts from the lectures					
10	I try to apply ideas from the course readings in other class activities such as lecture and discussion					
11	When I study for this course I outline the material to help me organize my thought					
12	When I study for this course I go through the readings and my class notes and try to find the most important ideas					

13	I make simple charts, diagrams, or tables to help me organize my course material					
14	When I study for this course I go over my class notes and make an outline of important concept					