THE RELATIONSHIP BETWEEN GOAL SETTING AND MEMORY STRATEGIES OF SELF-REGULATED LEARNING AND ACADEMIC ACHIEVEMENT OF STUDENTS OF COLLEGES OF EDUCATION IN ZAMFARA STATE, NIGERIA

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ABSTRACT
This study investigated the relationship between goal setting and memory strategies of Self-regulated learning on academic achievement of students of colleges of education in Zamfara State, Nigeria. Correlation research design was used for the study. The population of the study was 9,839 whereas 312 students were selected by means of proportionate stratified random sampling technique. The instruments used for the study was Academic Self-Regulated Learning Questionnaire (ASRLQ) and students Cumulative Grade Point Average (CGPA). Data collected were analysed using Pearson Product Moment Correlation (PPMC). Findings revealed that, significant relationship exists between goal setting and memory strategies of Self-regulated learning on academic achievement of students of colleges of education in Zamfara State. The researchers recommended that students of colleges of education should always set learning goals and aspire toward achieving them. Such goals should not only focus on passing examinations through rote learning but through active participation in the learning process which will enable them comprehend knowledge and necessary teaching skills that they can apply in their own teaching experience.

Keyword: Academic achievement, Goal setting, Memory strategy, Self-regulated learning

INTRODUCTION
Educators as well as social scientists have always been interested in exploring and understanding how human beings learn and acquire new knowledge. Educators have also variously examined ways by which learning and acquisition of knowledge can be maximized particularly in formal educational settings. Such a quest for the exploration of learning processes has led researchers and practitioners in education to examine a variety of cognitive strategies, personal background variables, motivation, and other variables that affect learning and account for individual and group differences in learning and acquisition of new information. Consequently, this led current educational psychology researchers to focus on
intrinsic and autonomous learning variables; among these variables is self-regulated learning as a means of raising student academic achievement. Self-regulated learning (SRL) implies learning regulated by the students themselves, and is not motivated and regulated by external factors. To Garba (2016), self-regulated learning refers to student’s capability to actively participate in their learning process by using different learning strategies with little guidance from lecturers or any agent of instruction, it involves memory strategy, goal setting, self-evaluation, seeking assistance, environmental structuring, learning responsibility and planning and organizing of one’s own learning in order to maximize it. The students’ management of their own learning, the steering and directing of cognitive activities and motivation to the attainment of learning goals, are the main features of SRL (Boekaerts & Cascallar, 2006). Berk (2003) views self-regulated learning as the process of taking control of and evaluating one’s own learning and behaviour. It is the process of continuously monitoring progress toward a goal, checking outcomes, and redirecting unsuccessful efforts.

Goal setting as a strategy of self-regulated learning entails analysing the learning task, setting specific learning goals, and planning the strategy to use to attain the goals. Goal setting can be thought of as the standards that regulate an individual’s actions (Schunk, 2001). In the classroom, goals setting may be as simple as earning a good grade on an exam, or as detailed as gaining a broad understanding of a topic. Short-term attainable goals often are used to reach long-term aspirations. For example, if a student sets a long-term goal to do well in an examination, then he or she also may set attainable goals such as studying for a set amount of time and using specific study strategies to help ensure success on the exam. Research also suggests that encouraging students to set short-term goals for their learning can be an effective way to help students track their progress (Zimmerman, 2008). Research equally shows that you are more likely to achieve a goal if you write it down. Having a Learning Plan allows you to write down your goals, and track your learning activities and outcomes, all in one place. Goals and sub goals, combined with positive attributional feedback, will increase student’s persistence toward the greater goal (Schunk, 2001) as they feel the sense of accomplishment that comes from applying effective learning strategies.

The setting of learning targets, or goal-setting, is an intrinsic part of the iterative nature of self-regulation. Students’ learning as far as the teacher is concerned, begins with setting learning goals, identifying what a learner wants to learn, proceeds through the production of work that aims to achieve those targets, to the assessment of the work to see if it does in fact meet the targets and then, finally, to the setting of new targets or revising ones that were not achieved (Garba, 2016). Ideally, students will increasingly assume responsibility for the setting of their learning targets and are set to monitor or track those targets. In practice, of course,
student’s ability to do this will vary, and teacher assistance will be more important to some students than others. As with other aspects of instruction, the use of modelling and explicit teaching is of relevance here. Teachers commonly use the SMART acronym as a way of guiding students in the design of a learning goal. In this acronym: S = Specific, M=Measurable, A=Achievable or Attainable, R =Relevant T = Time-bound

**Specific**: A specific goal is detailed, focused and clearly stated. Everyone reading the goal should know exactly what you want to learn.

**Measurable**: A measurable goal is quantifiable, meaning it can yield results. It must be possible to know whether the learning goal has been accomplished, so there needs to be some way of measuring this.

**Achievable/attainable**: Goals can be achieved based on a student’s skill, resources and area of practice. The achievement of the learning goal must be something the student is capable of attaining. The setting of unachievable learning goal will inevitably lead to lack of motivation and low self-esteem.

**Relevant**: The learning goal needs to be significant and relevant to the student’s present learning. If students are left to set learning goals without any guidance, at least initially, there is a danger that such targets will be less relevant than if they are set in the context of understanding.

**Time-bound**: A time-bound goal has specific timelines and a deadline. This will help motivate student to move toward achieving goal and to evaluate progress. Time-bound learning goals are easier to evaluate and track than those which have no particular time period attached to their achievement.

Memory strategies are ways used for the regulation of academic cognition. Cognitive regulation includes the types of cognitive and metacognitive activities that individuals engage in to adapt and change their cognition (Garba, 2016).

In research on self-regulated learning, the various cognitive strategies that individuals use to help them understand and learn the material involves the various rehearsal, elaboration, and organizational strategies and general metacognitive self-regulation that learners can use to control their cognition and learning (Pintrich & DeGroot, 1990). These strategies include the use of imagery to help encoding of information on a memory task as well as imagery to help one visualize correct implementation of a strategy, for example visualization in sports activities as well as academic ones (Zimmerman, 2008). The use of mnemonics would also be included in this cell as well as various strategies like paraphrasing, summarizing, outlining, networking, constructing tree diagrams, and note taking (Weinstein & Mayer, 1986).
Rehearsal strategies as a form of cognitive strategy, are important for simple tasks, and entail reciting and naming items from a list to be learned. It includes attempts to memorize material by repeating it over and over or other types of more “shallow” processing. Rehearsal is one of the best strategies to organize information in the short-term memory rather than in the long-term memory. Rehearsal strategies do not help students to relate or to integrate new information with existing information. Instead, by rehearsing the material, the students try to memorize keywords. However, they rarely identify the essential terms that are used in a course (Baharom, Idos & Razak, 2003). Rehearsal strategies are also important in learning complex information when it is used beyond repeating information. Among the rehearsal procedures that help complex learning are the underlining and summarizing of facts (oral or written) (Schunk & Zimmerman, 2003).

Elaboration strategies refers to actively making connections between new and already existing material and structuring this information in order to facilitate the storage of this knowledge in the long-term memory. It reflects a “deeper” approach to learning, by attempting to summarize the material and put the material into your own words. Elaboration strategies refer to the strategies that are helpful to organise information in the long-term memory by relating items that are going to be learned to each other (Baharom, et al, 2003). This means that the strategies are essential to integrate and relate new information to the previous information, and thus for making a connection with the information they have already learned (Weinstein, Jung & Acee, 2011). Some of the elaboration strategies that are used are imagery, mnemonics and questioning (Schunk & Zimmerman, 2003).

Organizational strategies refer to strategies that are essential in reducing the information to the relevant issues to enhance one’s comprehension. Also involve some deeper processing through the use of various tactics such as note-taking, drawing diagrams, or developing concept maps to organize the material in some manner. It entails selection of appropriate information, and to relate information in a form of meaningful categories, hierarchies and sequential structures. Therefore, the student is able to visualise, analyse, understand and store the information in the memory in a way that gives meaning (Weinstein, et al, 2011). Organisational strategies include the outlining and mapping of information and facts (Schunk & Zimmerman, 2003).

Metacognitive Strategies: Meta-cognition is defined as thinking about thinking. Thus, this refers to the internal processes that help to control the thinking behaviour, or to assist the students to learn. It is designed to check or determine whether learning is taking place. When there is no learning, meta-cognition activates other processes that are helpful to rectify the condition (Tuckman & Monetti, 2011). Meta-cognitive knowledge refers to the knowledge that
students have on how, when and what cognitive strategies to use, and to control cognition. A meta-cognitive self-regulatory activity is an activity that involves three general processes, namely planning, monitoring, and regulating (Pintrich, Smith, Garacia & McKeachie, 1991). Bandura (1986) proposed a theory of student self-regulated learning based on social cognitive theory (SCT). In accordance with Bandura’s description, a distinction is made among personal, environmental, and behavioural determinants of self-regulated learning. Thus, self-regulated learning is not determined merely by personal processes but it is assumed to be influenced by environmental and behavioural events in a reciprocal fashion. The person factor addresses internal factors such as cognitive and personal factors. The behaviour factor addresses the actions of the individual and the environment factor addresses the individual’s setting, situation, and context. Self-regulated learning fits well with this idea of reciprocal interactions because personal factors, behaviours, and environmental conditions change during learning and must be monitored. Thus, self-regulated learning occurs to the degree that a student can use personal processes to strategically regulate behaviour and the immediate learning environment.

**STATEMENT OF THE PROBLEM**

Poor academic achievement and underachievement as well as inability of NCE students to apply teaching skills into working places among students of colleges of education in Zamfara State results to loss of many rewarding life opportunities to both the individual learner and the society. The learner will miss the opportunity to further education due to poor academic achievement as he lacks the capabilities and enthusiasm for being lifelong learner. While in the long run; the society will not have enough skilled and qualified teachers needed to educate and lay solid foundation to both primary pupils and secondary students that will meet the demands of state for national development. That is why the entire stakeholders in education ranging from school administrators, teachers, lecturers and the parent have been bitterly complaining about the poor performance of NCE students (both graduate and trainees) in teaching at both pre-primary, primary and secondary schools.

When students face learning problems, they may ascribe them to their own lack of cognitive abilities. However, their actual problem may be that they do not know how to learn. For meaningful learning, acquisition of knowledge and high academic achievement to be achieved and maximized therefore SRL strategies should be adopted.

**AIM AND OBJECTIVES OF THE STUDY**

The aim of the study is to find out the relationship between goal setting and memory strategies of self-regulated learning and academic achievement of students of colleges of education in Zamfara State. The specific objectives are to:
1. determine the relationship between goal setting and academic achievement of students of colleges of education in Zamfara State.

2. determine the relationship between memory strategies of self-regulated learning and academic achievement of students of colleges of education in Zamfara State.

RESEARCH QUESTIONS

1. What is the relationship between goal setting and academic achievement of students of colleges of education?

2. What is the relationship between memory strategies of self-regulated learning and academic achievement of students of colleges of education?

RESEARCH HYPOTHESES

**Ho₁:** There is no significant relationship between goal setting and academic achievement of students of colleges of education.

**Ho₂:** There is no significant relationship between memory strategies of self-regulated learning and academic achievement of students of colleges of education.

REVIEW OF EMPIRICAL STUDIES

Radovan (2011) reported that goal setting and effort-regulation as a metacognitive component of memory strategy was among the key strategies which led to better academic achievement in the distance education programme. Zhang and Huang (2010) results indicated that there is a significant relationship between the constructs of SRL and of the test scores. They concluded that as students are better equipped in meta-cognitive self-regulation, they perform better in their listening comprehension tests. Chalk, Hagan-Burke and Burke (2005) found that an SRL strategy is crucial in writing, because it helps the students to develop strategies for brainstorming and revising. Wolters, Pintrich and Karabenick (2003) found consistent relations between the cognitive strategy and metacognitive scales with various indices of achievement in classrooms. In the college studies, they found that students who report using more cognitive and metacognitive strategies do score higher on tests in the course, grades on papers, lab performance, as well as receive higher grades. Purdie and Hattie (1996) in their research found that goal setting as an SRL strategy is related to academic achievement and that the higher the achievement, the greater the use of the strategy.

Cheng (2011) also investigated the relationship between students’ self-regulation ability and their learning performance with a sample of 6,524 students in Hong Kong, using a survey questionnaire. The self-regulation ability involved learning motivation, goal-setting, action-control and learning strategies. He concluded that the self-regulation-ability dimensions had a strong impact on learning performance. In his study Vargas (2012) examined the relationship between SRL and academic achievement of English Language learners (ELL)
Motivated Strategies Learning Questionnaire (MSLQ) was used. Results indicated that SRL is related to the academic achievement of students. Chen (2002) did a study to identify the type of SRL strategies that related to academic achievement. The SRL strategies involved meta-cognitive self-regulation, the management of time and the study environment, the regulation of effort, peer learning and help-seeking. It was found that effort regulation seemed to help the students to do well in a lecture-type of learning environment.

**METHODOLOGY**

The research design adopted for this study was correlation. The population for this research were all students of colleges of education in Zamfara State for the 2014/2015 academic session. In all, there are two colleges of education in Zamfara State, these are Zamfara State College of Education, Maru (co-educational) and Federal College of Education (Technical), Gusau (female). The total population was 9,839 students made up 5,200 males and 4,639 females.

Proportionate stratified random sampling was employed in this study. The frame of the population is organized into separate strata at the school level and gender. In each stratum, a sample of the individual participants is selected randomly but proportionately for fair representation. According to Korb (2012), in educational research, stratified random sampling is typically used when the researcher wants to ensure that specific subgroups of people are adequately represented within the sample. The sample consisted of 312 participants obtained from a population of 3,741 NCE III students. This is in line with Krejcie and Morgan (1970)’s table for determining sample size.

A questionnaire known as the academic self-regulated learning scale (A-SRL-S) was adopted. A-SRL-S was developed by (Magno, 2010). The A-SRL-S is a scale where 19 items are classified under memory strategy and goal setting, the items were rated on a four-point scale where 1 = strongly disagree up to 4 = strongly agree. The items in each subscale measuring the two Strategies of academic self-regulation were memory strategy (14 items) and goal setting (5 items). The minimum and maximum scores a respondent would obtain were 19 and 76 respectively. Scores falling 19 to 37 indicated low level of goal setting and memory strategies while scores ranging from 38 to 56 and 57 to 76 represented average and high level of goal setting and memory strategies of self-regulated learning. The dependent variable is the student’s academic achievement which was measured in terms of student’s CGPA.

Professionals in the Department of Educational Psychology and Counselling, Ahmadu Bello University Zaria, validated the instrument and found it appropriate for use in this study. The internal consistency for the two subscales measuring Goal setting and memory strategies of self-regulated learning were 0.883 and 0.759 respectively.
RESULTS

Table 1: PPMC Statistics on Relationship Between Goal Setting and Academic Achievement of Students of Colleges of Education in Zamfara State

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Sd</th>
<th>r =</th>
<th>p =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal Setting</td>
<td>312</td>
<td>14.3622</td>
<td>3.50107</td>
<td>0.550**</td>
<td>0.000</td>
</tr>
<tr>
<td>Academic achievement</td>
<td>312</td>
<td>2.7288</td>
<td>.93020</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 analysis revealed that significant relationship exists between goal setting and academic achievement of students of colleges of education in Zamfara State. This is because the calculated significant (p) value of 0.000 is lower than the 0.05 alpha level of significance at a correlation index level of 0.550. This shows that goal setting significantly relates with academic achievement of colleges of education students in Zamfara State. Therefore, the null hypothesis was rejected.

Table 2: PPMC Statistics on Relationship Between Memory Strategies of Self-Regulated Learning and Academic Achievement of Students of Colleges of Education in Zamfara State

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Sd</th>
<th>r =</th>
<th>p =</th>
</tr>
</thead>
<tbody>
<tr>
<td>memory strategy</td>
<td>312</td>
<td>40.3814</td>
<td>8.73983</td>
<td>0.557**</td>
<td>0.000</td>
</tr>
<tr>
<td>Academic achievement</td>
<td>312</td>
<td>2.7288</td>
<td>.93020</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above Pearson Product Moment Correlation analysis revealed that significant relationship exists between memory strategy and academic achievement of students of colleges of education in Zamfara State. This is because the calculated significant (p) value of 0.000 is lower than the 0.05 alpha level of significance at a correlation index level of 0.550. This shows that memory strategy significantly relates with academic achievement of colleges of education students in Zamfara State. The null hypothesis is therefore rejected.

DISCUSSION

The present study was designed to find out the relationship between goal setting and memory strategies of self-regulated learning on academic achievement of students of colleges of education in Zamfara State. The findings indicated that self-regulated learning strategies (memory strategy, goal setting,) had significant correlation with academic achievement. This finding agrees with Kosnin (2007) who opined that self-regulated learning was found to have a significant relationship with academic achievement and that high achievers were better users.
of self-regulated learning than low achievers. Equally relevant is the study conducted by Tunde (2014) which showed that self-regulated learning strategies have a significant influence on predicting students’ academic performance in chemistry. John and Ademola (2014) investigated self-regulation and peer influence as determinants of senior secondary school students’ achievement in science. The findings revealed that there was a positive but not significant relationship between science achievement and self-regulation.

The finding of this present study indicates that memory strategy as a self-regulated-learning strategy significantly relates to academic achievement of colleges of education students. This finding is in line with findings of other researchers, for instance, Radovan (2011) reported that effort-regulation as a metacognitive component of memory strategy was among the key strategies which led to better academic achievement in the distance education programme. Zhang and Huang (2010) also revealed the results of their study which indicated that there is a significant relationship between the constructs of SRL and of the test scores. They concluded that as students are better equipped in meta-cognitive self-regulation, they perform better in their listening comprehension tests. In addition, Chalk, Hagan-Burke and Burke (2005) found that a SRL strategy is crucial in writing because it helps students to develop strategies for brainstorming and revising. A research carried out by Wolters, Pintrich and Karabenick (2003) found consistent relations between the cognitive strategy and metacognitive scales with various indices of achievement in classrooms. In the college studies, they found that students who report using more cognitive and metacognitive strategies score higher on tests in the course, grades on papers, lab performance, as well as receive higher grades. At the same time, their studies show that there are consistent, and theoretically predicted, relations between cognitive strategy use, metacognitive self-regulation and achievement.

This study indicated that there is significant relationship between goal setting and academic achievement. This finding is in line with Radovan (2011) who reported that goal setting as a SRL strategy was among the key strategies which led to better academic achievement in the distance education programme. This finding is in agreement with the results of Purdie and Hattie (1996) in their research who found that goal setting as a SRL strategy is related to academic achievement and that the higher the achievement, the greater the use of the strategy.

Other studies yielded different results from this study. For example, Ablard and Lipschultz (1998) investigated the relationship between SRL and academic achievement. They concluded that being a high achiever does not necessarily mean there will be more use of SRL strategies. Pelt (2008) in his study revealed that according to the motivated strategy for learning questionnaire (MSLQ) results, no significant relationship was found between SRL and
academic achievement. However, the result of this finding was not obtained from MSLQ but ASRLQ.

CONCLUSION

Based on the findings of the study, it was concluded that significant relationship exists between goal setting and memory strategies of self-regulated learning and academic achievement of students of colleges of education in Zamfara State.

RECOMMENDATIONS

From the findings of this study, the following recommendations were made:

1. The researchers recommend that lecturers and parents should encourage students to have well defined end goals that should be rigorously followed. They should also be guided to set goals for their learning and to comprehend that short term learning goals are easier to evaluate and achieve than long term goals and that achieving short term goals is what will determine achieving long term learning goals.

2. The researchers recommend that students should adopt cognitive and meta-cognitive self-regulated (memory) strategies that will aid retention during learning which may include rehearsal, elaboration, organization that may include imagery, mnemonic, and concept mapping.

REFERENCES


