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TIME MANAGEMENT AND MNEMONIC SKILLS AS CORRELATES OF STUDENTS' ACADEMIC ACHIEVEMENT IN COLLEGES OF EDUCATION IN NORTH-EAST, NIGERIA

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Abstract

This study examined the relationship between time management, mnemonic skills and students' academic achievement in Colleges of Education in North-East, Nigeria. The study adopted a correlational survey research design. A multistage sampling technique was used to select 877 NCE II students students from four Colleges of Education, namely Federal College of Education, Yola, Adamawa State; Aminu-Saleh College of Education, Azare, Bauchi State; Federal College of Education (Technical), Potiskum, Yobe State; and Federal College of Education, Gombe State, out of the Colleges of Education in the region. The sample size was determined using the Cochran (1977) sample size formula for a finite population. The College Students' Study Skills Questionnaire (CSSSQ), as adapted, was used for data collection. Mean and standard deviation were used to summarise the data, while Pearson product-moment correlation (PPMC) was used to answer the research questions and test the hypotheses at the 0.05 significance level. The findings revealed a significant, positive relationship between time management skill and students' academic achievement ($r = .560$, $p < .001$). Similarly, mnemonic skill had a significant, positive relationship with students' academic achievement ($r = .554$, $p < .001$). The study concluded that both time management and mnemonic skills were significantly associated with students' academic achievement. It was therefore recommended, among others, that lecturers should encourage students to develop and effectively manage their study time both within and outside the school environment.

Keywords: Time management, mnemonic skills, study skills, academic achievement

1. Introduction

Teacher trainees in Colleges of Education in Nigeria deal with different aspects of learning, teaching, psychological and curricular issues in their teacher education programme. Students at the colleges face increasing sources of academic issues, including demonstration of the ability to participate in demanding curricular tasks under time constraints. This further compounds the realisation that they may not have acquired optimal learning and study strategies (Badau, 2018) to achieve excellent results. Many times, learners enter colleges and pass through the educational system without having the necessary knowledge about how to achieve a well-balanced level of academic responsibility and competence to succeed.

Academic achievement of students is one of the main indicators of effective learning and may be an indicator of a quality teacher trainee. However, it is common knowledge that many students often struggle to achieve good results in college. Academic achievement is influenced by many factors. Some of the factors contributing to academic achievement and failure may be institutional, environmental, teacher-related, student-related, and parent-related. In recent times, literature has categorised this multitude of factors as cognitive and non-cognitive factors (Yadava & Yadava, 2018). Cognitive

factors refer to students' characteristics that relate to their thinking processes and mental procedures such as intelligence, study skills, school grades, standardised test scores, memory, and reasoning and have been listed as predictors of academic success. This study takes a critical look at two critical study-skill variables (Egbujuo & Ajagun, 2019) and students' academic achievement in colleges of education in North-East, Nigeria. To effectively prepare for examinations, a student needs an effective study schedule to achieve good results. This is because an assessment of how a student performs depends heavily on how he or she studies (Al-Khawaldeh & Al-Khasawneh, 2019). Once a student accepts the premise that studying does not come naturally, it should be apparent that the student needs to set up an organised programme to promote adequate study.

Study skills involve the utilisation of specific techniques to help a learner receive, record, organise, retain, retrieve, or recall information acquired in a teaching-learning situation. Researchers have defined study skill as a method for encoding, saving, maintaining, recounting, and using information logically, effectively, and sufficiently. These study skills include time management, mnemonic, concentration, spacing, reading, practice testing, and note-taking skill (Nakata & Suzuki, 2019). There are wide range of skills that students can perform before, during, and after teaching and learning activities to help them remember and apply the information presented in the classroom. These study skills allow learners to take in information and demonstrate their learning through writing, speaking, taking tests, and examinations. Over the years, researchers have been exploring why some students acquire a profound understanding of the materials studied, while some have only a superficial grasp of the information presented. This often affects their grades and high standardised test scores (Ayoub & El-Aziz, 2018). Apparently, the growing interest of some researchers in factors such as study skills could be due to the importance of retrieval for academic achievement.

1.1. Statement of the Problem

The persistent decline in academic achievement of students, especially among pre-service teachers in Colleges of Education in Nigeria has become a major concern to education stakeholders. Ajetomobi (2024), in a preliminary investigation conducted as part of her doctoral research, examined the graduation records of students from four Colleges of Education in the North-East, Nigeria, namely Federal College of Education (FCE), Yola, Adamawa State; Aminu Saleh College of Education, Azare, Bauchi State; Federal College of Education (Technical), Gombe State; and Federal College of Education, Potiskum, Yobe State. The investigation covered the 2015/2016 to 2019/2020 academic sessions and revealed a low proportion of students graduating at the stipulated time. The data showed that in 2015/2016, 65.9% of the students did not graduate at the stipulated time, while only 34.1% graduated. In 2016/2017, 67.3% did not graduate, while 32.7% graduated. Similarly, in 2017/2018, 67.3% did not graduate, while only 32.7% graduated. In 2018/2019, 66.7% did not graduate, compared with 33.3% who graduated, while in 2019/2020, 61.2% did not graduate and 38.8% graduated. Thus, throughout the five academic sessions examined, the proportion of students who graduated at the stipulated time remained below 40%. These figures point to a persistent concern about students' academic progress and timely completion of their programmes in Colleges of Education in the region.

Scholars have long argued that poor academic performance could be traced to different factors ranging from institutional, learning environment, teacher-related and student-related factors. Meanwhile, some studies have suggested that study skills are crucial factors in students' learning ability, retention of learning, and competence during examinations. Specifically, skills such as time management and mnemonic skills are considered to be central toward learners' retention and retrieval of knowledge acquired in the classroom. Thus, those students lacking these key learning strategies could struggle to cope with demanding academic tasks, which may partly explain the high rate of failure and delayed graduation observed in Colleges of Education. Given national ambitions for progress in science and technology in Nigeria, the persistent under-performance of teacher trainees presents a significant barrier. No educational system can surpass the quality of its teachers; thus, improving academic outcomes at the Colleges of Education is imperative. The present study is designed to examine the extent to which time management and mnemonic skills are associated with academic achievement among students in these institutions in North-East Nigeria.

1.2. Objectives

1. To determine the relationship between time management skill and students' academic achievement in Colleges of Education in North-East Nigeria.
2. To determine the relationship between mnemonic skill and students' academic achievement in Colleges of Education in North-East Nigeria.

1.3. Research Questions

1. What relationship exists between time management skill and students' academic achievement in Colleges of Education in North-East Nigeria?

2. What relationship exists between mnemonic skill and students' academic achievement in Colleges of Education in North-East Nigeria?

1.4. Hypotheses

$H0_1$: There is no significant relationship between time management skill and students' academic achievement in Colleges of Education.

$H0_2$: There is no significant relationship between mnemonic skill and students' academic achievement in Colleges of Education.

2. Literature Review

2.1. Theoretical framework

The study adopted the self-regulation theory by Zimmerman (2006) and cognitive information processing (CIP) by Atkinson and Shiffrin (1968). These theories stand as the blueprint for this paper. Zimmerman defines self-regulation as processes that learners use to systematically focus their thoughts, feelings, and actions on the attainment of their goals. Simply put, the SRL theory depicts an active and constructive process where learners set their learning goals, monitor, regulate, and control their cognition, motivation, and behaviour during the learning process to achieve learning itself. Zimmerman was able to advance some self-regulation components in an academic setting. This includes setting up study goals (goal setting), strategising effective ways of solving the tasks given (task strategies), deciding on the best cognitive strategy for encoding a task (memory strategy), planning effective study time (time management), deciding on location of study to acquire optimum benefit with low distractions (environment structuring), requesting assistance from peers and tutors in areas of concern (seeking assistance) and lastly self-reflection on personal studies to evaluate the goals achieved (self-evaluation).

As could be seen in Zimmerman's theory of self-regulation, time management skill is one of the self-regulated processes that student-teachers could use while studying in order to achieve their learning goals. Time management enables learners to plan, organise, and regulate the amount of time devoted to different academic activities, thereby helping them to control their study behaviour in line with their academic goals. In this sense, effective time management represents a practical application of self-regulation because students must regulate their study time, resist distractions, and maintain their attention on activities that contribute to academic success. The same self-regulatory process can also support the use of mnemonic strategies, as learners need to deliberately select, organise, and apply appropriate memory strategies when studying. Therefore, self-regulation theory provides a basis for understanding how the purposeful use of time management and mnemonic skills may contribute to students' academic achievement.

CIP theory proposes that like a computer, a human mind is a system that actively processes information received from the senses through the application of logical rules and strategies. This perspective equates the mind to a computer, which is responsible for analysing information from the environment and determining how the information will be stored. The theory is concerned with how individuals perceive, analyse, manipulate, use, and remember information. According to the theorists, learning or studying is a series of mental (cognitive) processes and one of the earliest CIP models was the multi-memory or modal model proposed by Atkinson and Shiffrin (1968). According to this model, the mind's machinery includes attention/perception mechanisms (sensory memory) for bringing information in, working or short-term memory for actively manipulating information, and long-term memory for passively holding information so that it can be used in the future.

To keep this information "alive" or help transfer it from one memory stage to the next and prevent loss, certain processes, techniques, or skills must be adopted by the individual. Two important processes are rehearsal and encoding. Encoding and elaboration refer to the process of relating incoming information to concepts and ideas already stored in memory in ways that make the new material more memorable. Mnemonic strategies are among the techniques that can support such encoding and elaboration because they help learners organise new information and establish meaningful or distinctive associations that can later serve as cues for retrieval (Worthen & Hunt, 2017). By relating new information to what the learner already knows, mnemonics make studying more meaningful and memorable. Mnemonics take various forms, for instance, "MR. NIGER D," which represents Movement, Respiration, Nutrition, Irritability, Growth, Excretion,

Reproduction and Death, while "AIDS," which represents Acquired Immunodeficiency Syndrome combines the first letters of the material into a meaningful word, making it easy to remember. In both cases, the first letters of the material are organised into a meaningful word, making the information easier to encode and retrieve. This technique is classified as an acronym, one of the mnemonic techniques. An acronym is a word that is made from the first letters of the items to be remembered (Worthen & Hunt, 2017).

The techniques used in processing information by a student-teacher may reflect in the student examination results, proving the efficacy or otherwise of such techniques. Information that is poorly processed through the use of ineffective study skills may make retrieval difficult during examinations. This could lead to poor examination scores. On the other hand, information that is well processed through the use of effective study skills such as mnemonic strategies may enhance retrieval during examinations. This may lead to better examination scores.

2.2 Time Management Skill and Students' Academic Achievement

Time is a continuum in which events succeed one another from the past through the present to the future (Damtew et al., 2019). Damtew et al. (2019) further emphasise the importance of controlling one's time as a means of controlling the events in one's life. Time may be described as a measure of the duration and order of events in the past, the present, and the future. The term "time management" became familiar in the 1950s and 1960s as referring to a tool to help managers make better use of available time. The concept of time management is associated with Frederick Winslow Taylor's early analyses of motion and time studies of workers, with the purpose of reducing unproductive work tasks and time-wasting (Filgona et al., 2020). Taylor is most remembered for developing the stopwatch time study, which, combined with Frank Gilbreth's motion study methods, later became the field of time and motion study (Ayoub & El-Aziz, 2018). Although every individual has 24 hours at their disposal each day, it is the effective use of time that distinguishes achievers from non-achievers in all spheres of life. Most students in colleges and higher learning are commonly occupied with demanding schedules involving attending lectures and classes, completing assignments, going to the library to study, working on projects and practicals, studying for tests and examinations, managing personal lifestyles, and participating in extracurricular activities, which can be taxing and overwhelming. Having this skill helps students to have less demanding, stress-free, effective, and more productive academic lives because time management affords students the ability to plan, manage, and prioritise their time for academic endeavours.

Time management is the art of arranging, organising, scheduling, and budgeting one's time for the purpose of generating more effective work and productivity (Adebayo, 2015). The author explains that time management is self-management with an explicit focus on time in deciding what to do; on how much time to allocate to the activities; on how activities can be done more efficiently and on when the time is right for particular activities. Time is one of the most precious and most limited assets (Ayoub & El-Aziz, 2018), particularly in higher education. Effective time management is an essential component of the independent study expected in higher education (Kruger, 2018). Time management is therefore very crucial and may affect an individual's overall performance and achievements (Al-Khawaldeh & Al-Khasawneh, 2019). Bonaccio and Reeve (2010) also elucidate time management as a set of techniques for managing, planning, and appropriate use of time (Alvarez Sainz, Ferrero, & Ugidos, 2019).

Adebayo (2015) examined the impact of time management on students' academic performance in higher institutions in Nigeria. The target population for this study was the entire students of Ekiti State tertiary institutions. The results revealed that there was a significant relationship between students' time management and their academic performance in higher institutions, and other indices like procrastination, prioritisation and planning were strong indices that affected the students' academic performance in relation to time management. Alyami et al. (2021) also conducted a study to determine the impact of time management on the academic performance of diagnostic radiology technology students at King Abdulaziz University, Jeddah, Saudi Arabia. The study had a cross-sectional survey-based study design. It was conducted among students of diagnostic radiology technology department at King Abdulaziz University from September 2020 to February 2021.The analysis of the study revealed that 37.3% agreed or strongly agreed that they manage their time. Here, 69.2% students with 4.5-5 GPA strongly agreed that they meet their deadline (p value = 0.005) and 36.7% students with 4-4.5 GPA strongly believed that their academic performance decreased due to misplanning (p value = 0.005). Around 71 (66.3%) students with 4.5-5 GPA agreed or strongly agreed to make a to-do list or use a calendar (p value 0.047). In conclusion, according to students' perceptions, preplanning their studies had been beneficial for their academic performance. However, less than half of the students agreed that they manage their time.

Iweala and Wodi (2026) examined time management strategies for enhancing academic performance of students in public universities in Rivers State. The study was guided by three research objectives. The study adopted the descriptive survey research design with all final-year undergraduate students in the three public universities in Rivers State: Rivers State

University, Ignatius Ajuru University of Education, and the University of Port Harcourt as the study population. A sample of 470 students was selected using a stratified random sampling technique to ensure representation across different institutions and academic disciplines. Data collected on time management strategies and academic performance revealed a significant positive relationship between effective time management strategies as goal prioritisation, scheduling, and task planning and students' academic performance.

2.3. Mnemonic Skill and Students' Academic Achievement

The word "mnemonic" is derived from the Ancient Greek word "mnēmonikos", meaning 'of memory' or 'relating to memory' (Barkati & Ahamad, 2024) and is related to Mnemosyne ("remembrance"), the name of the goddess of memory in Greek mythology (Pillai, 2017). Mnemonics in antiquity were most often considered in the context of what is today known as the art of memory. Kruger (2018) says that mnemonic is derived from the Greek word "Mnemonicon" which means an art of memorisation. Mnemonics are techniques or devices, either verbal or visual in nature, that serve to improve the storage of new information, and the recall of information contained in memory.

Based on the definitions above, it can be concluded that a mnemonic technique means a method, technique, or system that improves memory or utilises memory in certain ways. The development of skills and strategies to enhance memory is referred to as mnemonic and dates back thousands of years (Worthen & Hunt, 2017). In fact, good memory was considered a virtue in medieval Europe, and mnemonic training was fundamental to medieval education (Barkati & Ahamad, 2024). Thus, it appears that the desire to improve one's memory has a history that long predates the formal study of psychology. However, in modern times, people rely on accurate memories to perform a variety of tasks throughout the day. The use of passwords and user names while using the internet, bank and different accounts, and personal identification numbers for personal and business transactions are used to aid in remembering and recalling.

Memory is the mental faculty that allows us to retain information as well as recall experiences for a long time (Damtew et al., 2019). Therefore, to retain and recall much of the information learnt, there is a need for memory to process the information. Mukingambeho et al. (2019) define memory as the retention of information or responses after the criterion has been reached. Memory is the ability to encode, process, and retrieve information that one has been exposed to. As a skill, memory is inseparable from learning and academic functioning. In order to remember and retrieve or recall knowledge that has been acquired during studying, students need to use specific effective memory skills that will help them transfer information from the short-term memory into their long-term memory in an organised way for the knowledge to be retrieved during an exam, thereby leading to academic excellence.

Although numerous techniques and strategies have been offered to improve memory (Worthen & Hunt, 2017), skills like rehearsal, repetition, cramming, expressive writing, acrostics, associations, and saying words aloud commonly referred to as self-recitation, have been shown to improve academic achievement (Mukingambeho et al., 2019). Mnemonic devices are memory skills that help students organise information for encoding. The devices are especially useful when we want to recall larger bits of information such as steps, stages, phases, and parts of a system (Students' Academic Resource Centre (SARC), University of Central Florida, 2020). Mnemonics are systematic procedures for enhancing students' memory of new information (Mercanlioglu, 2020). Mnemonic strategies are inexpensive and can help average learners gain access to the general education curriculum, its usage involves no additional costs for the purchase of material or technology (Mushtaq & Mash'hadi, 2021). Mnemonic is a memory tool that serves as a bridge from short-term memory to long-term memory thereby helping to recall information from long-term memory.

The study of Al-Khawaldeh and Al-Khasawneh (2019) investigated the effect of teaching mnemonic keyword strategy on vocabulary learning and retention among students with learning disabilities in Abha, Saudi Arabia. The study adopted the quasi-experimental design and involved 40 students with learning disabilities studying in the ninth grade in one of the middle schools in Abha, Saudi Arabia. Statistically significant differences were found between both groups in the post-test of vocabulary achievement in favour of the experimental group. The study concluded the important role of including keyword strategy in learning and retaining vocabulary, using the keyword strategy contributes to enhancing the students' motivation towards learning vocabulary due to the various methods of presenting new words. Okoro et al. (2020) assessed the impact of mnemonic instructional strategy on pupils' achievement in Mathematics. The study was conducted in Owerri Municipal Council of Imo State, Nigeria with the sample of 205 pupils randomly selected for the study. This quasi-experimental study adopted the pre-test post-test non-equivalent design. The findings revealed that the mnemonic instructional strategy was effective, leading to higher achievement compared with the conventional strategy group.

The literature reviewed so far indicated a substantial volume of research conducted on time management and mnemonic skills in relation to students' academic achievement. Besides, many of such studies were conducted outside the shores of Nigeria, while the few studies conducted in Nigeria did not examine the two variables together or apply the same statistical approach adopted in the present study. More importantly, the reviewed studies have not sufficiently established whether time management skill is significantly related to academic achievement among NCE II students in Colleges of Education in North-East Nigeria. Similarly, it remains unclear whether mnemonic skill is significantly related to the academic achievement of NCE II students within the same context. The existing literature has therefore provided limited evidence on how these two study skills relate to academic achievement among this particular group of students, especially within the institutional, geographical and socio-educational context of North-East Nigeria. Therefore, the gap is not only the limited attention given to NCE II students, but also the lack of clear empirical evidence on the relationship between time management, mnemonic skill and academic achievement among NCE II students in Colleges of Education in North-East Nigeria. This study therefore seeks to fill this gap by examining the relationship between time management, mnemonic skill and academic achievement among NCE II students in Colleges of Education in North-East Nigeria.

3. Methodology

3.1. Research Design

The research design for this study is a correlational survey research design. Correlational survey is a type of study that seeks to establish what relationship exists between two or more variables (Nworgu, 2006).

3.2. Area of the Study

This study was conducted in North-East Nigeria, one of the country's six geopolitical zones, comprising Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe states. The region covers approximately 284,646 sq. km constituting about 30.8% of Nigeria's total land mass and had an estimated population of 29 million as of 2020. It stretches from Lake Chad in the north to the Mambilla Plateau in the south, bordered by the Niger Republic to the north and Cameroon to the east. North-East Nigeria is ethnically, religiously, and culturally heterogeneous, home to numerous ethnic groups each with its own distinct language, though Hausa, Fulfulde, and Kanuri remain the most widely spoken (North-East Development Commission (NEDC, 2022)). The region contains Colleges of Education serving students from diverse geographical and socio-educational backgrounds, making it a relevant setting for examining time management, mnemonic skills and academic achievement.

3.3. Population

The population of this study consisted of NCE II students of Colleges of Education in North-East Nigeria, namely Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe States. Available statistics from the targeted population showed that there were 25,672 NCE II students registered for the 2020/2021 academic session. The rationale for choosing NCE II students for the study was based on their two years of academic exposure and the assumption that they might have gained sufficient experience in using study skills compared with NCE I students. Although the study was conducted during the 2021/2022 academic session, the 2020/2021 enrolment figures were used as the population and sampling frame because they represented the most recent consolidated enrolment statistics available for the targeted Colleges of Education at the time of the study.

3.4. Sample and Sampling Technique

The sample size for this study was 877 NCE II students from the four institutions. This sample size was computed using the Cochran (1977) sample size formula for a finite population. The multi-stage sampling technique at three levels was employed in the study. Cluster sampling technique was used first for the selection of four states (Adamawa, Bauchi, Gombe & Yobe) out of the six states in the North-Eastern region. Cluster sampling technique was used because the study population was distributed across a wide geographical area such as the North-East region.

At the second stage, four colleges of education out of six colleges of education in the four clusters/states were selected using simple random sampling technique. These four colleges of education are Federal College of Education (Technical), Gombe State; Federal College of Education (Technical), Potiskum, Yobe State; Federal College of Education, Yola, Adamawa State; and Aminu Saleh College of Education, Azare, Bauchi State. Simple random sampling technique was used in order to give every school equal chance of being selected for the study.

The third stage involved the selection of participants for the study. A proportionate sampling technique was employed to select 877 NCE II students from the four selected colleges' student population. Proportionate stratified sampling according to Akogun (2000) ensures that every segment (stratum) of the population is identified and its proportion of the population determined. After the determination of the sample size, the actual selection of respondents was by simple random sampling using the balloting technique. Moreover, this sample size represented about 3.4% of the entire population as recommended by Cohen et al. (2011).

3.5. Instruments for Data Collection

The students' study skills were measured using the adapted instrument termed "College Students' Study Skills Questionnaire" (CSSSQ). The instrument is an adapted version of Congos (2011) study skills inventory. The items were placed on a five-point rating scale of Very High Level (VHL) 5; High Level (HL) 4; Moderate Level (ML) 3; Low Level (LL) 2 and Very Low Level (VLL) 1. To ensure the validity of the instrument, the adapted instrument (CSSSQ) was subjected to face and content validation by four experts, from Curriculum and Instruction, Educational Management, and Measurement and Evaluation/Educational Psychology in the Department of Environmental and Life Sciences Education (ELSE), Modibbo Adama University, Yola. Some corrections were made to the numbering of items, restructuring of items to simplify them, and presentation of positive and negative responses. Comments and recommendations from the validators were taken into consideration in the final draft of the instrument.

The reliability of the instrument (CSSSQ) was established by trial testing a sample of 60 respondents from College of Education (COE), Hong, Adamawa State which was not part of the sample for the study. Cronbach's alpha statistical analysis was used to determine the internal consistency of the items of the instrument. The CSSSQ yielded a Cronbach's alpha reliability coefficient of 0.79 which indicated a high level of internal consistency for the instrument (Taber, 2018).

The Cumulative Grade Point Average (CGPA) of students was collected using a pro-forma tagged "College Students' CGPA". This was provided by the school examination officers in various colleges of education after institutional permission had been secured. The respective examination officers assisted in providing the official CGPA records of the NCE II students who had responded to the questionnaire using each student's matriculation number to match their CGPA record to the questionnaire responses. This was used as the measure of students' academic achievement as it ensured a more objective and verifiable measure of academic achievement than self-report.

3.6. Method of Data Analysis

The data collected from the respondents were analysed using descriptive and inferential statistics. Mean and standard deviation were used to summarise the responses and describe the variables, while the Pearson product-moment correlation was used to answer the research questions and test the corresponding null hypotheses at the 0.05 level of significance. The Pearson correlation coefficient was used to determine the direction and strength of the relationship between the study variables. A positive value of *r* indicated a positive relationship, while a negative value indicated a negative relationship. The null hypothesis was rejected when the probability value was less than 0.05 and was not rejected when the probability value was greater than or equal to 0.05. The strength of the correlation was interpreted as low when $r = .10–.29$, moderate when $r = .30–.49$, and strong when $r = .50–1.00$, following Cohen et al. (2011).

4. Results

Research Question One: What relationship exists between time management skill and students' academic achievement in Colleges of Education in North-East Nigeria?

This research question was answered using the Pearson product-moment correlation to determine the relationship between time management skill and students' academic achievement. The result is presented in Table 1.

Table 1: Pearson's Correlation between Time Management Skill and Students' Academic Achievement

Variable	N	Mean	SD	r	Sig. (2-tailed)
Time management skill	877	3.37	0.95	.560	< .001

Academic achievement	877	3.55	0.56

Table 1 shows a positive and statistically significant relationship between time management skill and students' academic achievement ($r = .560$, $n = 877$, $p < .001$). This indicates that higher levels of time management skill were associated with higher academic achievement among the students.

Research Question Two: What relationship exists between mnemonic skill and students' academic achievement in Colleges of Education in North-East Nigeria?

This research question was answered using the Pearson product-moment correlation to determine the relationship between mnemonic skill and students' academic achievement. The result is presented in Table 2.

Table 2: Pearson's Correlation between Mnemonic Skill and Students' Academic Achievement

Variable	**N**	**Mean**	**SD**	**r**	**Sig. (2-tailed)**
Mnemonic skill	877	3.38	0.70	.554	< .001
Academic achievement	877	3.55	0.56		

Table 2 shows a positive and statistically significant relationship between mnemonic skill and students' academic achievement ($r = .554$, $n = 877$, $p < .001$). This indicates that higher levels of mnemonic skill were associated with higher levels of students' academic achievement in Colleges of Education in North-East Nigeria.

$H_0$1: There is no significant relationship between time management skill and students' academic achievement in Colleges of Education in North-East Nigeria.

Since Table 1 shows a statistically significant relationship between time management skill and students' academic achievement ($r = .560$, $p < .001$), the null hypothesis was rejected.

$H_0$2: There is no significant relationship between mnemonic skill and students' academic achievement in Colleges of Education in North-East Nigeria.

Since Table 2 shows a statistically significant relationship between mnemonic skill and students' academic achievement ($r = .554$, $p < .001$), the null hypothesis was rejected.

6. Discussion

The finding from the first research question and its equivalent hypothesis revealed a significant, positive relationship between time management skill and students' academic achievement in Colleges of Education in North-East Nigeria ($r = .560$, $p < .001$). This finding suggests that students who reported better management of their study time also tended to record higher academic achievement. The result is in agreement with Namaziandost et al. (2018), Adebayo (2015), and Iweala and Wodi (2026), who reported positive contributions of time management to students' academic performance. The finding, however, differs from Mushtaq and Mash'hadi (2021), who reported a weak negative relationship, as well as studies that found insignificant relationships between time management and academic achievement. The difference may be related to variations in the characteristics of the respondents, level of education, measurement of time management, and the academic environments in which the studies were conducted. In the present study, the respondents were NCE II students in Colleges of Education in North-East Nigeria, whose academic demands and study conditions may differ from those of students in other educational settings. Also, the use of self-reported time-management practices in the present study may have captured students' regular study behaviours differently from studies that relied on specific test scores or other measures of academic performance.

The positive relationship observed in this study may be explained by the role of time management in helping students organise their academic activities. Namaziandost et al. (2018) and Iweala and Wodi (2026) similarly emphasised the importance of effective time management for students' academic performance. Students who organise their study periods, allocate adequate time to academic tasks and manage competing activities may be better positioned to concentrate on their studies and complete academic tasks within the required period. Effective management of study time may also help students balance academic activities with leisure and rest. These conditions may partly explain why time management was positively associated with academic achievement among the students in the present study.

The finding from the second research question and its equivalent hypothesis revealed a significant, positive relationship between mnemonic skill and students' academic achievement in Colleges of Education in North-East Nigeria ($r = .554$, $p < .001$). More so, a significant, positively strong relationship existed between mnemonic skills and students' academic achievement. This finding suggests that students who reported greater use of mnemonic skills also tended to record higher academic achievement. This result is similar to that of Rabia et al. (2017), which reported a significant positive relationship between mnemonic skill and students' academic achievement.

Previous studies have also provided support for the usefulness of mnemonic strategies in learning and recall. For instance, Rabia et al. (2017) reported improved recall performance among learners who used mnemonic strategies. Similarly, Olowookere et al. (2015) observed that mnemonic strategies could support learners, particularly those who experienced difficulties with conventional learning approaches. These findings provide a possible explanation for the positive relationship observed in the present study, as mnemonic strategies may help students organise, encode and retrieve academic information more effectively. Consequently, students who make greater use of such strategies may be better able to recall information during academic tasks and examinations, which may be reflected in their academic achievement.

7. Conclusion

The present study concluded that time management skill and mnemonic skill were significantly and positively related to students' academic achievement in Colleges of Education in North-East Nigeria. The findings indicate that students who reported higher levels of time management skill tended to have higher academic achievement, while students who reported greater use of mnemonic skills also tended to record higher academic achievement. These findings suggest that time management and mnemonic skills are important study-related factors associated with academic achievement among pre-service teachers in Colleges of Education. However, the correlational nature of the study does not establish that either skill causes improvement in students' academic achievement. The findings therefore highlight the relevance of these study skills while recognising that students' academic achievement may also be influenced by other factors.

8. Recommendations

Based on the findings and the conclusion from this study, the following recommendations were made:

1. Lecturers should encourage students to improve and manage their study time both in school and out of school. Students should have a study timetable at the beginning of every semester, and be disciplined enough to stick to it.

2. Training and guidance should be provided to students on how to apply simple mnemonic techniques in their courses of study. Lecturers should help to raise students' awareness during lectures on how to use appropriate mnemonic techniques to make reading and assimilation easier for them.

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Conflict of Interest

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References

Adebayo, F. A. (2015). Time management and students' academic performance in higher institutions, Nigeria - A case study of Ekiti State. *International Research in Education, 3*(2), 1-12.

Ajetomobi, A. F. (2024). Study skills as correlate of students' academic achievement in colleges of education in North-East Nigeria. Unpublished PhD thesis, Modibbo Adama University, Yola, Nigeria.

Akogun, O. B. (2000). *The researcher's manual.* Paraclete Publishers.

Al-Khawaldeh, M. A., & Al-Khasawneh, F. A. (2019). The effect of mnemonic keyword strategy instruction on vocabulary retention of students with learning disabilities. *International Journal of English Linguistics, 9*(4), 138-144

Alvarez Sainz, M., Ferrero, A. M., & Ugidos, A. (2019). *Time management: Skills to learn and put into practice. Education + Training, 61*(5), 635–648. ~~Emerald Publishing.~~ https://doi.org/10.1108/ET-01-2018-0027

Alyami, A., Abdulwahed, A., Azhar, A., Binsaddik, A., & Bafaraj, S. M. (2021). Impact of time-management on the student's academic performance: A cross-sectional study. *Creative Education, 12,* 471-485.

Atkinson, R., & Shiffrin, R. (1968). Human memory: A proposed system and its control processes. In K. Spence & J. Spence (Eds.). *The psychology of learning and motivation: Advances in research and theory* (Vol. 2). Academic Press

Ayoub, A. S., & El-Aziz, E. M. (2018). Enhancing study skills among freshman nursing students: An intervention study. *Journal of Nursing and Health Science (IOSR-JNHS)*, *7*(3), 22-29.

Badau, K. M. (2018). Managing study habits and its impact on secondary school students' academic performance in Nigeria. *European Journal of Educational and Development Psychology, 6*(2), 15-24

Barkati, M. G., & Ahamad, J. (2024). Mnemonics: A smart approach of learning and teaching social studies for competitive examinations; In Beyond boundaries. *Research in humanities, social sciences, commerce and management* (Vol. II, pp. 75–80). BHUMI Publishing. https://doi.org/10.5281/zenodo.13906966

Bonaccio, S., & Reeve, C. L. (2010). The nature and relative importance of students' perceptions of the sources of test anxiety. *Learning and Individual Differences, 20*, 617–625.

Cochran, W. G. (1977). *Sampling techniques (3rd ed.).* John Wiley and Sons, Inc.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education (7th ed.). Routledge.*

Congos, D. H. (2011). *College level study skills inventory*. University of Central Florida

Damtew, S., Assefa, A., Mengiste, A., & Mohit, B. (2019). The relationship between study skills and learning styles: The case of underachieving students in some selected secondary schools in Wolaita, *Ethiopia Journal of Humanities and Social Science* (*IOSR-JHSS) 24(*3), 41-48

Egbujuo, C. J., & Ajagun, G. (2019). Measures of students' study habit as predictors of academic achievement in chemistry. *Benue State University Journal of Educational Management, 1*(2), 1-13

Filgona, J., Sakiyo, J., & Gwany, D. M. (2020). Teachers' pedagogical content knowledge and students' academic achievement: A theoretical overview. *Journal of Global Research in Education and Social Science*, *14*(2), 14-44.

Iweala, B. E., & Wodi, J. C. (2026). Time management strategies for academic performance of students in public universities in Rivers State. *International Journal of Innovative Education Research, 14(1)*, 1-10. https://www.seahipublications.org/wp-content/uploads/2026/01/IJIER-M-1-2026.pdf

Kruger, S. (2018). *Improving concentration; SOAR Study skills; A simple and efficient system for getting better grades in less time.* Grand Lighthouse Publishers. Retrieved on 14 January 2026 from https://www.how-to-study.com/study-skills-articles/improving-concentration.asp.

Menchak, C.Y., & Ndamnsah, B. R. (2020). Relationship between study habit and academic performance in communication in English of 100 level students of Taraba State University Jalingo. *International Journal of Innovative Psychology & Social Development, 8*(3), 128-132

Mercanlioglu, C. (2020). The relationship of time management to academic performance of master level students. *Journal of Business and Management studies*, *2*(1), 25-36.

Mukingambeho, D., Nzahabwanayo, S., Nzabarirwa, W., & Nizeyimana, G. (2019). Levels of study skills among undergraduate students in Rwanda: The case for the national police college. *Interchange, 50*, 221–247.

Mushtaq, S., & Mash'hadi, A. F. (2021). Relationship between students' perception of assessment, their exam preparation strategies and their CGPA at university level. *Global Social Sciences Review, 6*(1), 85-94.

Nakata, T., & Suzuki, Y. (2019). Effects of massing and spacing on the learning of semantically related and unrelated words. *Studies in Second Language Acquisition, 41*, 287–311.

Namaziandost, E., Esfahani, F. R., & Hashemifardnia, A. (2018). The comparative effect of spacing instruction and massed instruction on intermediate EFL learners' reading comprehension. *SAGE Open*, *8*(4), 1-8.

North-East Development Commission. (2022). *North-East stabilisation and development master plan 2020-2030* (Vol 1). Binani Printing Press.

Nworgu, B. G. (2006). *Educational research: Basic issues & methodology* (2nd Ed.). ~~Nsukka:~~ University Trust.

Olowookere, E. I., Alao, A. A., Odukoya, J. A., Adekeye, O. A., & Agbude, G. A. (2015). Time management practices, character development and academic performance among university undergraduates: Covenant university experience. *Creative Education, 6*(1), 79-86.

Okoro, I. F., Akaraonye, J., & Unamba, E. C. E. (2020). Assessment of the impact of mnemonic instructional strategy on pupils' achievement in mathematics: A case for sustainable development. *Research Gate.* Retrieved from https://www.researchgate.net/publication/343920702_ASSESSMENT_OF_THE_IMPACT_OF_MNEMONIC_INSTRUCTIONAL_STRATEGY_ON_PUPILS'_ACHIEVEMENT_IN_MATHEMATICS_A_CASE_FOR_SUSTAINABLE_DEVELOPMENT.

Pillai, N. R. (2017). Using mnemonic to improve vocabulary, boost memory, and enhance creativity in the ESL classroom. *The English Teacher, 38*(22), 62–83

Rabia, M., Mubarak, N., Tallat, H., & Nasir, W. (2017). A study on study habits and academic performance of students. *International Journal of Asian Social Science, 7*(10), 891–897

SARC Online (2020). *Students' Academic Resource Centre (SARC) University of Central Florida.* Retrieved from https://academicsuccess.ucf.edu/sarconline/.

Taber, K. S. (2018). The use of Cronbach's Alpha when developing and reporting research instruments in science education. *Research in Science Education.* DOI 10.1007/s11165-016-9602-2

Worthen, J. B., & Hunt, R. R. (2017). *Mnemonic techniques: Underlying processes and practical applications.* Oxford: Elsevier Ltd.

Yadava, S., & Yadava, A. (2018). Cognitive predictors of academic achievement in middle school students. *Indian Journal of Health and Wellbeing*, *9*(1), 158-162.

Zimmerman, B. J. (2006). Development and adaptation of expertise: The role of self-regulatory processes and beliefs. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 705–722). Cambridge University Press

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