



Influence of cognitive ease and procrastination on academic performance among undergraduates in Adekunle Ajasin University, Akungba-Akoko, Ondo State.

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ABSTRACT

Over time, there has been shortfall in the recorded academic performance of undergraduates in Nigeria. This is traced to lazy thinking or cognitive ease and the habit of procrastination which could result from low academic self-regulation. Little is known of cognitive easing as a primogenitor of academic performance. Also, there is dearth of literature on how procrastination influences academic performance in the country. This study therefore fills in the gap by investigating the influence of cognitive ease and procrastination on academic performance among university students in Akungba. Participants 250 (125 males), (125 females) were purposively selected. Cognitive ease was measured using cognitive reflection questionnaire by Shane Fredericks, Procrastination was also measured using the procrastination scale while the Academic performance was measured using students' CGPA. Results using ANOVA showed no significant influence of cognitive ease and gender on student Academic Performance. However, Procrastination was found to be significant [$F(1,190) = 4.09, p < .05$]. Based on this finding, it was recommended that psycho-education be provided to assist students combat procrastination especially in academics. Further research on cognitive ease is also encouraged for a conclusive stand on its influence of academic performance.

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Introduction

Background

Academic success at all level of educational institution plays a very essential role when it comes to how well students can make rightful decisions in relations to choice making and also securing future opportunities. Several studies have been carried out by various researchers in an attempt to understand what it entails to succeed academically, and also on several factors that influence the attainment of academic success. Putting this in mind, academic success is wished for by every student, but it can never truly be achieved on a platter of gold, it is earned with result. It can only be achieved through rigorous learning and training, much practical works, effecting thinking and evaluation of information given, also much diligence and hard work.

Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university. School systems mostly define cognitive goals that either apply across multiple subject areas or include the acquisition of knowledge and understanding in a specific intellectual domain of academic achievement depending on the indicators used to measure it. Among the many criteria that indicate academic achievement, there are very general indicators such as procedural and declarative knowledge acquired in an educational system, more curricular-based criteria such as grades or performance on an educational achievement test, and cumulative indicators of academic

achievement such as educational degrees and certificate. All these criteria have in common is that they represent intellectual endeavours and thus, more or less, mirror the intellectual capacity of a person. In developed societies, academic achievement plays an important role in every person's life. Academic achievement is measured by the GPA (grade point average) or by standardized assessments designed for selection purpose such as the SAT (Scholastic Assessment Test) to determine whether a student will have the opportunity to continue his or her education (e.g., to attend a university). Therefore, academic achievement defines whether one can take part in higher education, and based on the educational degrees one attains, influence one's vocational career after education. Besides the relevance for an individual, academic achievement is of utmost importance for the wealth of a nation, this is because the higher the level of educated and professional people or citizens in a society, the higher the level of development which will cut across all sectors of the economy in a nation and vice versa.

Academic achievement or success of students in the past decades has been of great concern to researchers, educationists, scholars, and educational psychologist. And today, this trend has been intensively felt by the academics, parents, and students, this is because academic achievement has become a yard stick used in determining a child's future (Dundes, Cho & Kwak 2009). Academic performance of a student can be either good or bad depending on the school environment, the student's background, types of teachers and their qualifications, the willingness of students to learn, and

students` capability to apply knowledge gained in real life situation. In this modern age, academic achievement is universally accepted as the most important determinant of a person`s adult status, in his career as well as being viewed as highest chance of becoming a success and therefore accorded respect among colleagues. It goes without saying that a low level of academic performance in a student can be detrimental to their enjoying the benefits that are usually accrued to academic success. Low achievement is defined as a discrepancy between the child`s actual ability and achievement. For decades, multiple studies have shown that the quality of student`s thoughts is critical to learning and could potentially determine their academic achievement. However it also shows a consensus that college students differ in how they process, encode, recall, organize and apply the information they learn; while some are thoughtful learners, others process information more superficially and this has stimulated recent thinkers to show that academic achievement is strongly correlated with various measures of individual cognitive traits. Cognitive ease and on the contrary, cognitive strain or critical thinking (attributes of human old and new brain referred to as System1 and System 2 respectively) are traits that are linked to academic achievement.

Khaneman (2011) defined cognitive ease as the mental stage in which things are going on well, no threats, and no major news, no need to redirect attention or mobilize effort within an individual. There is no activity within an individual that seems challenging or tasking which could as a result lead to the active functioning of the cognitive aspect of the brain. Cognitive ease (lazy thinking) feels good, but it gives us false sense of security because it makes us think we understand far more than we actually do. For example when weighing or comparing two ideas or beliefs, our brains tend to gravitate towards one that is simple rather than one that is complex just because the simpler idea involves cognitive ease. Also individuals tend to believe information they have heard repeatedly, most especially when ideas and solutions to common challenging problems come from people who they hold in high esteem and believe have greater experience than them rather than seeking solutions personally through checking these given knowledge with their own thoughts and beliefs. This mental folly known as cognitive ease occurs daily amongst people, it cuts across all boards, most especially amongst students in all tertiary institutions. A number of students who feel they are intelligent tend to believe they have full control over their academic performance. However, this can be an over estimation of their abilities or readiness. Such students tend not to prepare well enough for examinations, believe they already have the basic knowledge needed for their success and eventually find themselves making mistakes which when realised in hindsight, seem outrageous. Pompian (2006) discussed two types of over confidence that affect students in general: "prediction overconfidence" and "certainty overconfidence". Prediction overconfidence occurs when "confidence intervals that students assign to their academics predictions in terms of sitting for tests and examinations are too narrow". Students perceive that their performance prediction will be more favourable than they actually will be. This is often caused by blindness from their overconfident behaviour. Certainty overconfidence occurs when "students are often also too certain of their judgments." When a student makes a decision that they follow through regardless of the available

information (often in disagreement with their own decision), they are a victim of certainty overconfidence. Certainty overconfidence occurs after the decision has been made, while prediction overconfidence occurs when attempting to make a decision. Students who are victimized by both types of overconfidence bias frequently make irrational decisions that may not be optimal to their academic success.

Cognitive ease, aside involving overconfidence (Moore & Kennedy 2011; Pompian 2006), also entails herding especially amongst the students. Herding is the behaviour associated with humans who follow what other people are doing rather than their own intuition. What makes this behaviour irrational is that the people they are following often contest what they believe is optimal, based on the information they hold. Herding is pervasive in the educational sector. Herding, that is, imitation among students, is said to occur when instead of following their own beliefs and private information, students decide to imitate the decisions of their mates, who they perceive to be better informed (Blasco, Corredor & Ferreruella 2010). In particular, students who herd often switch their stance on academic performance based on what other students may be doing. Students who are engaged in herding often times rely on other colleagues for information or answer to solutions to any task or problem that seems challenging and in this situation, the student is simply doing what most other students are doing and not taking into any consideration his or her own understanding and logical reasoning in relation to the problem faced at that given time. This behaviour is irrational because it is not optimal for the academic performance of a student. Cognitive strain or critical thinking on the other hand is clear, reasoned thinking involving critique. Its details vary amongst those who define it. According to Beyer (1995), critical thinking means making clear, reasoned judgments. During the process of critical thinking, ideas should be reasoned and well thought out/judged. The National Council for Excellence in Critical Thinking defines critical thinking as the intellectually disciplined process of actively and skilfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action while Reynolds (2011) believes that a good thinking habit entails observation, interpretation, making analysis, inferences, evaluation and explanation. He believes that an individual or group engaged in a strong way of thinking gives due consideration to establish for instance;

- Evidence through reality
- Context skills to isolate the problem from the context
- Relevant criteria for making judgement well
- Applicable methods and techniques for forming the judgements
- All applicable theoretical construct for understanding the problem and question at hand

Procrastination is another factor considered in this study that is associated with academic achievement. Procrastination has been defined as "letting the low-priority tasks get in the way of high priority ones," It is also defined as avoiding doing a task which needs to be accomplished. Procrastination comes from the Latin *pro* meaning 'forward, forth or in favour of' and *crastinus*, meaning 'of tomorrow'. Procrastination is a very special type of postponement, it is irrational. This important distinction is increasingly recognized.

The American Heritage Dictionary, for example, defines procrastination as "To put off doing something, especially out of habitual carelessness or laziness," while Merriam-Webster Collegiate Dictionary calls it "To put off intentionally the doing of something that should be done." But it is the Oxford English Dictionary that gets closest to the irrational dark heart of the word. It defines procrastination as a postponement, "often with the sense of deferring through indecision, when early action would have been preferable," or as "deferring action, especially without good reason." Pychyl (2001) points out that "all procrastination is delay, but not all delay is procrastination.

Procrastination is a common challenge for college students; about 80-95% of students report procrastinating (Steel, 2003). This challenge is important to address because procrastination can develop into a habit that can seriously impact student's ability to be productive. This in turn can negatively affect student's academic performance (Steel, 2003). Research shows there are lots of reasons *why* students procrastinate including self-doubt about performance (Burns, 1993), low-frustration tolerance--a tendency to give up if the work feels too difficult (Ellis & Knaus, 1977), and believing myths like "I work better under pressure. Estimates indicate that 80%–95% of college students engage in procrastination (Ellis & Knaus, 1977; O'Brien, 2002), approximately 75% consider themselves procrastinators (Potts, 1987), and almost 50% procrastinate consistently and problematically (Day, Mensink, & O'Sullivan, 2000; Haycock, 1993; Micek, 1982; Onwuegbuzie, 2000a; Solomon & Rothblum, 1984). The absolute amount of procrastination is considerable, with students reporting that it typically occupies over one third of their daily activities, often enacted through sleeping, playing, or TV watching (Pychyl, Lee, Thibodeau, & Blunt, 2000). Furthermore, these percentages appear to be on the rise (Kachgal, Hansen, & Nutter, 2001). In addition to being endemic during college, procrastination is also widespread in the general population, chronically affecting some 15%–20% of adults (Harriott & Ferrari, 1996). Procrastination also appears to be a troubling phenomenon. People most strongly characterize it as being bad, harmful, and foolish (Briody, 1980), and over 95% of procrastinators wish to reduce it (O'Brien, 2002). Justifying this viewpoint, several studies have linked procrastination to individual performance, with the procrastinator performing more poorly overall (Beswick, Rothblum, & Mann, 1988; Steel, Brothen, & Wambach, 2001; Wesley, 1994), and to individual well-being, with the procrastinator being more miserable in the long term (Lay & Schouwenburg, 1993; Tice & Baumeister, 1997). There are three components in procrastination, namely, *behavioural*, *cognitive*, and *emotional*. Behaviourally, procrastination is viewed as a bad habit which has been reinforced. Students have been found to avoid tasks which they find unpleasant (Solomon & Rothblum, 1984). They would rather be engaged doing activities which are more rewarding, especially with short term over long term gain, or the anxiety associated with studying. It is also related to stress. Procrastination has been found to result from cognitive distortions or faulty thinking (Ellis and Knaus, 1977), and it is also related to problems perceiving and estimating time (Aitken, 1982). Procrastinators in the first category often have perfectionist expectation and are over-conscientious. They are believed to fear success or failure which eventually leads to neurotic avoidance.

They lack self-efficacy and self-esteem, and are self-conscious and self-critical. Researchers from their findings concluded that there were different types of academic procrastination, such as low conscientiousness and anxiety-related procrastination (Ferrari 1995) and that academic procrastinators typically make five cognitive distortions which promote and maintain their task avoidance, namely:

1. Overestimation of time left to perform tasks,
2. Underestimation of time required to complete tasks,
3. Overestimation of future motivational states.
4. Misreliance on the necessity of emotional congruence to succeed at task.
5. Belief that working when not in mood to work is sub-optimal.

Another variable examined is gender and its relationship with academic achievement and cognitive ease. Gender differences have become on the hotlist of critical issues around the world Hausmann, Tyson, and Zahidi (2009). There have been conflicting reports on the issue of gender, cognitive ease and academic performance. While Maccoby and Jacklin (1974) believed that gender differences in mathematics performance were small or nonexistent in childhood and that the male gain advantage at the beginning of puberty, Hyde, Fennema, and Lamon (1990) found a small gender difference favouring girls in computation in elementary school and middle school and no gender difference in computation in the high school years. In Nigeria, Afuwape and Oludipe (2008) studied the integrated science achievement of graduating pre-service teachers for a period of three years. The sample of the study included 253 (126 males and 127 females) pre-service teachers in a college of education in Nigeria. The findings of the study revealed that there was no significant difference in academic performance in integrated science between males and females, and that for each year male students had higher mean scores than female students. Some courses or professions have been designated as requiring high level of logical reasoning or cognitive strain such as sciences and computations, research findings so far on this is inconclusive hence the need for investigating gender relationship or its interaction in this study. In view of the foregoing, the research questions raised are: Do the students in Adekunle Ajasin University employ cognitive ease and procrastinate in their studies, if so, what influence do these and gender have on their academic performance. Hypothesis therefore generated is:

Hypothesis

Cognitive ease, Procrastination and Gender will have significant independent and joint influences on academic performance among the undergraduates.

Methods

Design and participants

This study adopted quasi-experimental design. The participants were (102 males), (89 females), 300 and 400 level undergraduates randomly selected from various faculties in the university after their lectures. About 200 initially participated, however, 191 questionnaires were eventually analysed for the study while others were discarded due to inadequacies in the responses.

Instruments

Gender was measured with responses as male or female. Procrastination was measured using the Procrastination Scale developed by Lay (1986) for student population. It is a 20-item scale inventory rated on a 5-point Likert scale format

with responses ranging from 1- Extremely uncharacteristic to 5- Extremely characteristic. The sample item includes: I often find myself performing task I intended to do days before, I generally delay before starting on work I have to do. The Cronbach alpha for the current study showed a reliability coefficient of 0.89 and norm for target population was 53.71 which implies that participants who score above this mean score are high on level of procrastination. Cognitive ease was measured using the Cognitive Reflection Test Questionnaires developed by Shane Frederick (2005). The Questionnaire involved a series of mathematical, word association, and true and false based questions. Many of these questions were taken from Daniel Kahneman's book, *Thinking Fast and Slow*. And these questions are meant to test an individual's ability to suppress intuitive and wrong answers that are triggered by System 1 rather than the correct but less noticeable answer triggered by System 2. The scale consists of 6- items with series of mathematical and word association with true and false responses. Examples are; "A bat and a ball costs 1 dollar and 10 cents. The bat costs one dollar more than the ball. How much does the ball cost?" The Cronbach alpha of the scale for this study is 0.41 with a mean score of 4.58.

Procedure

A pilot study was first carried out to test for reliability and validity of the scales as cognitive ease especially, hadn't been used among Nigerian undergraduates before. Fifty (50) participants were randomly selected from the undergraduate population from a different university and the psychometric properties obtained have been given under instruments.

In the main study, using simple randomization technique, different groups of students were selected from lecture halls in all faculties on campus by reason of their availability after lectures. Their consent and cooperation were sought. Instructions on required responses were given including writing their CGPA at the bottom of the cognitive ease scale. The procrastination scale was first administered after which the cognitive ease scale was administered and both scales collected back within 5 minutes of administering the cognitive ease scale, with scales for each person stapled together.

Data Analysis

A 3- Way ANOVA, 2x2x2 was carried out using SPSS 17.0 version.

Results

Summary of 2x 2x2 ANOVA on the Independent and Interactive Influence of Gender, Cognitive Ease and Procrastination on Students Academic Performance.

Source	SS	df	MS	F	p
Gender	.188	1	.188	.650	> .05
Cognitive Ease	.162	1	.162	.558	> .05
Procrastination	1.183	1	1.183	4.085	< .05
Gender * Cognitive Ease	.560	1	.560	1.935	> .05
Gender * Procrastination	.000	1	.000	.001	> .05
Cognitive Ease * Procrastination	.075	1	.075	.257	> .05
Gender * Cognitive Ease * Procrastination	.260	1	.260	.896	> .05
Error	53.007	183	.290		
Total	55.689	190			

Results in the table reveals that except for significant independent influence of Procrastination on Students

Academic Performance [$F(1,190) = 4.09, p < .05$], there was no significant interactive influence of all the variables or independent influence of Cognitive ease and Gender. Thus, the hypothesis that Cognitive Ease and Procrastination and Gender will have independent and joint influences on Academic Performance was partially accepted.

Discussion

The purpose of the study was to test the extent to which cognitive ease, procrastination and gender influence academic performance among Adekunle Ajasin University undergraduates, this was hypothesized and was partially accepted. Although, cognitive ease and gender had no independent significant influence on academic performance and were found with procrastination not to jointly influence academic performance of the students, procrastination was found to be. Students in Adekunle Ajasin who procrastinate* had low academic performance. This finding adds to the large body of literature on procrastination and also attested to by Lakshminarayan and Potdar (2013) whose study revealed negative correlation of -0.63 with a significance level of < 0.01 indicating that students who showed high procrastination scores performed below average in their academics. By postponing academic activities, students tend to subsequently do their work or prepare for examinations inappropriately. However, further analysis with Man Whitney U in Lakshminarayan and Potdar study showed significant difference in procrastination scores of the two gender groups with the males scoring higher than the females. This finding contradicts what was found in the current study where gender did not independently or jointly with other variables influence academic performance. This is not surprising as there has always been conflicting reports on the issue of gender, cognitive ease and academic performance. Cognitive ease was also not significant in its influence in this study on academic performance. This result to an extent negates the findings of Gianmarco (2013) whose research suggests, that students who receive a graduate degree are not affected by cognitive ease as much as those who receive an undergraduate degree. This however does not mean that they are immune to the cognitive laziness. It only suggests that they are better equipped, possibly through the, experience, and investment, to deal with the folly and possibility of avoiding irrational decisions in their academic performance. Therefore, irrespective of the academic level of students and how high or low the academic performance of students are, they all at one point or the other engage in academic activities that do not help build their test taking skills although it does not affect their performance academically as reported in this research. On cognitive ease and gender, Baxter-Magolda (1992) who concluded from her research that gender differences in students' reasoning patterns and the ways they justify their thoughts are fluid, a continuum with numerous variations and combinations rather than a dichotomy between female and male students. She submitted that no single reasoning pattern was used exclusively by women or men, nor did students, male or female, limit themselves to one reasoning pattern over time or between different domains. Further, she claimed to find more similarities than differences in men's and women's ways of knowing, and she also was able to determine that different reasoning patterns led to equally complex ways of viewing the world for both groups of gender. Abubakar and Oguguo (2011) in their study further demonstrated that gender had no significant influence on academic

performance. They believed that some other variables such as students' personality disposition, cognitive ability and the environment should be included so as to determine the significant effects these variables- gender and cognitive style have on academic performance of students.

Conclusion

In conclusion, this study attests to research findings on procrastination influence on academic performance. However, further research on influence of cognitive ease and the relationship of gender is encouraged. Implementing a study with identical constructs but using CGPA obtained directly from departmental or faculty records would give conclusive information on the influence of cognitive ease. Based on the findings in this study, it is highly recommended that the students are given psycho-education on study habits as freshmen.

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