



Impact of Lecturer-Student's Relationship on Academic Performance of Students in Mathematics in Joseph Sarwuan Tarka University Makurdi Benue State , Nigeria

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ABSTRACT

The study was carried out to assess the impact of lecturers-student relationship on academic performance of students in mathematics in Joseph Sarwuan Tarka University, Makurdi, Benue state. Four specific objectives and four research questions were stated in the study with 2 research hypotheses was formulated to be tested at 0.05 level of significance. A total of (100) student were sampled randomly from Joseph Sarwuan Tarka University, Makurdi. Descriptive Statistics (mean and standard deviation) Was used to analyze data obtained from research questions. While mean standard deviation and T-test were used to test the hypotheses Lecturer-student relationship has no significance impact on academic performance in Ordinary Differential Equation in Joseph Sarwuan Tarka University, Makurdi? The result also revealed that there is no significance impact of lecturers-student relationship on male and female student performance in mathematics in Joseph Sarwuan Tarka University, Makurdi. The T-test analysis further shows that the impact of the lecturer-student relationship on student outcomes were not contingent on their academic performance. There the null hypothesis is not rejected. The study concludes that mathematics is important as a means of finding a way out of difficulty, a way round an obstacle and attaining an aim which is not immediately attainable. The study therefore recommended that an effective lecturer-student relationship may be the keystone that allows the other aspects to work well. Hence it is imperative that greater depth of research about lecturer-student relationship and academic performance be made available to guide general behaviors without academic environment for optimum instructions and performance

Keywords: lecturer-students relationship, Gender, Performance and Mathematics

Introduction

Mathematics is seen by society as the foundation of scientific and technological knowledge that is vital in social- economic development of the nation (Anamuah-Mensah, Asabere-Ameyaw & Dennis, 2005). Because of this, Mathematics has remained a compulsory subject at both primary and secondary levels in Nigeria and used as a basic entry requirement into any of the prestigious courses at the tertiary level (Anamuah-Mensah *et al.*, 2005).

Mathematics reveals hidden patterns that help us to understand the world around us and at a psychological level, exposure to mathematics helps in developing an analytic mind and assists in better organization of ideas and accurate expression of thoughts (Adler, 2018). According to Michael (2015), Mathematics enables one to make the invisible to be visible, thereby solving problems that would be impossible otherwise. Again, Mathematics is widely used in various fields and covers a wide range of activities (Zakaria *et al.*, 2010). It is therefore, critical that the performance and progress of students in Mathematics at the University is monitored. Cardinal to this, is the issue of lecturer-student relationships in schools.

Affective relationships between students and lecturers are a key factor in students' academic performance in Mathematics. Research demonstrates pervasive effects of relationship quality on students' academic achievement for both males and female students (e.g., Hughes, Luo, Kwok, & Loyd, 2008; Stipek & Miles, 2008). When mean levels of relationship quality are examined, research consistently indicates that teachers have poorer relationships with males than females (Baker, 2006; Hamre & Pianta, 2001; O'Connor, 2010). Importantly though, current evidence is limited to student gender only as a factor in teacher-student relationships.

Research has indicated that the relationship between lecturers and students is an important predictor of academic achievement in Mathematics. In fact, the most powerful weapon lecturers have, when trying to foster a favorable learning climate, is positive relationships with their students. Students who perceive their lecturers as more supportive have better achievement outcomes (Boynton and Boynton, 2005).

Hamre *et al.* (2013) assert that lecturers (teachers) ought to be in active engagement in interactions with their students in order for learning to take place. Among the most influential factors that an individual interacts with, parents and lecturers are pivotal and plays significant role in developing the mental picture of self image.

Based on theories of interpersonal relationships, it is argued that lecturers have a fundamental quest for relatedness with the students in their class

which can play a significant role in students' self-concept and expectations regarding scholastic achievements and how to make meaningful life after school. Thus, the kinds of relationships teachers establish with their students have a significant toll on their academic achievement (Hughes & Kwok, 2007).

The type of relationship between the lecturers and the student serves as a connection between the two, providing either a conducive or non-conducive atmosphere for a classroom environment. A study conducted by Marzano (2003) revealed that "an effective lecturer-student relationship may be the keystone that allows the other aspects to work well". Hence, it is imperative that, greater depth of research about lecturer-student relationships and academic performance be made available to guide behaviours within academic environment for optimum instructional outcomes.

In Nigeria, educational outcomes are important issues for discussion at the family, school and national levels. Recently, there have been reports on instructors (teachers and lecturers) being fired for establishing negative relationships with students, both at the middle and higher levels of education. Although much literature is available on lecturer-student relationship and academic performance, (Ewnetu and Fisseha, 2008; Tam and Fatimah 2009; Hughes and Kwok, 2007), have studied the phenomenon in the African context especially within the secondary school context, where students strive for belongingness and recognition. The study, among exploring the nature of lecturer-student relationships that exist, examines the extent to which lecturer-student relationships affect students' academic performance in the University system. The study therefore examines the impact of lecturer-student relationship on academic performance of students in mathematics in Joseph Sarwaun Tarka University, Makurdi.

Koller, Baumert, and Schnabel (2001) studied gender differences in mathematics achievement, which favoured males in achievement, interest, and placement in advanced mathematics courses. Literature on gender differences in mathematics suggest that the number of female students pursuing mathematics up to the higher level reduces (Eisenberg, Martin, & Fabes, 1996) but various researchers report that gender differences in the mathematics attitudes of American and European students may still be prevalent. Benbow and Stanley (1980, 1983) found, that among talented junior high school mathematics students, boys' outperformed girls on the quantitative SAT, a test that was obviously advanced for this age group. One can clearly state that a general pattern has begun to emerge: women perform roughly the same as men except when the test material is quite advanced; then, often, they do worse.

The following research questions were asked to guide this study;

- i. What is the nature of lecturer-student relationships in Ordinary Differential Equation lectures in Joseph Sarwaun Tarka University, Makurdi?
- ii. What is the impact of lecturer-student relationship on academic performance in Ordinary Differential Equation in Joseph Sarwaun Tarka University, Makurdi?
- iii. What is the impact of lecturer-student relationship on academic performance of male and female students in Ordinary Differential Equation in Joseph Sarwaun Tarka University, Makurdi?

The following hypotheses were formulated and tested at 0.05 level of significance

- i. Lecturer-student relationship has no significant impact on academic performance in Ordinary Differential Equation in Joseph Sarwaun Tarka University, Makurdi.
- ii. Lecturer-student relationship has no significant impact on academic performance of male and female students in Ordinary Differential Equation in Joseph Sarwaun Tarka University, Makurdi.

Methodology

The research design adopted for this study is the causal-comparative design. A causal-comparative design is a research design that seeks to find relationships between independent and dependent variables after an action or even has already occurred. The research design is appropriate for the study because the study sets out to determine the impact of lecturer-student relationship on academic performance of students in Mathematics in Joseph Sarwaun Tarka University, Makurdi, Benue State, Nigeria. The area of this study is Joseph Sarwaun Tarka University, Makurdi, Benue State, Nigeria formally known as the Federal University of Agriculture, Makurdi. Joseph Sarwaun Tarka University, The population of this study comprised of all students offering Mathematics in the Department of Mathematics Education at Joseph Sarwaun Tarka University, Makurdi, Benue State, Nigeria Purposive and simple random sampling techniques were employed to select respondents for this study. The Department of Mathematics was purposely selected for this study. One hundred (100) year 3 (300 level) students who offered Ordinary Differential Equation were purposively selected from each academic level randomly giving a total sample size of (100) respondents. Two instruments were used to collect data. The lecturer-student relationship questionnaire and proforma which was used to determine students' performance. The questionnaire was used to collect data concerning lecturer-student relationship while the proforma was used to collect data concerning the performance of students. The instrument was validated by experts who validated both the face and content validity of the instrument. The pilot test was carried out to check the reliability of the instrument using the Cronbach's Alpha test of reliability to obtain a Cronbach's Alpha coefficient of 0.579.

Result

Table 1: mean and standard deviation of items

Items	Numbers	Mean	Standard deviation
Paternalistic	100	3.46	0.642
Priestly	100	2.76	0.683
Employee	100	1.90	0.610
Collegial	100	2.62	0.632
Contractual	100	3.16	0.838
Entertainer	100	3.30	0.674
Covenantal	100	3.18	0.716
Average		2.91	

From table 1 the mean sums for item 1,2,3,4,5,6,7 are 3.46, 2.76, 1.90, 2.62, 3.16, 3.30, and 3.18 respectively this results indicate that apart from item 3 which is employee relationship the student agreed with all the items. This implies that the relationship of lecturers-student relationship in Ordinary Differential Equation lecturers in Joseph Sarwuan Tarka University Makurdi is Paternalistic, Priestly, employee, collegial, contractual, entertainer and covenantal respectively.

Research Question Two

Table 2: Measurement of mean between performance and relationship.

Variable	N	Mean	Standard Deviation	Std Error Mean
Performance	100	61.08	12.19	1.22
relationship	100	2.91	0.302	0.302

From table 2 the performance mean of students score is 61.08 while the mean of lecturers relationship is 2.91. $2.91 > 2.50$. and Hence this implies that lecturers-student relationship has a positive impact on students' performance in mathematics in Ordinary Differential Equation in Joseph Sarwuan Tarka University, Makurdi?

Research question 3

Table 3: Impact of lecturer-student relationship on academic performance of male and female students

Variable	N	Relationship mean	Performance mean	Standard Deviation	Std Error Mean
Male	59	2.910	61.34	11.99	1.56
Female	41	2.913	60.71	12.61	1.97
Average of both mea	2.91	61.05			

From Table 3, the performance mean of male is 61.34 while that of the female is 60.71. the mean average of the male performance mean and the female performance mean is 60.05. $60.05 > 2.50$. The relationship mean for the male is 2.910 while relationship mean for the female is 2.913. The average relationship mean both gender is 2.91. $2.91 > 2.50$. this result implies that there is a positive impact on the male and female performance in mathematics. However, the male students have more impact from the lecturers than the female Students due to their higher mean performance.

Testing Research Hypothesis

Hypothesis 1

Lecturer-student relationship has no significance impact on academic performance in Ordinary Differential Equation in Joseph Sarwuan Tarka University, Makurdi?

Table 4: T-test report showing Lecturer-student relationship impact on performance

variable	Mean	Std. Deviation	Std Error mean	Df	T cal	Sig
Score- relationship	58.17	12.22	1.22	99	47.59	0.00

From Table 4 the significance value is 0.00. Hence $0.00 < 0.05$ the null hypothesis is rejected. It implies that there is a significance impact of lecturer-student relationship on student performance in Ordinary Differential Equation in Joseph Sarwuan Tarka University.

Hypothesis 2

Lecturer-student relationship has no significance impact on academic performance of male and female students in Ordinary Differential Equation in Joseph Sarwuan Tarka University.

Table 5: T-test report showing impact on academic performance of male and female students

variable	f	df	tcal	Std Error	Sig
performance	0.007	98	0.254	2.49	0.800

From Table 5, the significance is 0.800. The value is greater than 0.05. This implies that the null hypothesis is not rejected. This means that there is no significance on the impact of lecturer-student relationship on male and female student performance in Ordinary Differential Equation in Joseph Sarwuan Tarka University.

Conclusion

The study has established that mathematics is important as a means of finding a way out of difficulty, a way round an obstacle and attaining an aim which is not immediately attainable. Unfortunately, in Nigeria, students performance in mathematics at sequential evaluation is catastrophic. Such performance can be linked to many psycho-social factors among which is the lecturers-students relationship. Over the years students performance in mathematics has prompted educational researcher to continuously make relentless effort at identify mitigating factors that might account for the observed poor performance. Some research studies suggest that factors inside and outside the classroom affect the students performance and interest. Among other variables identified are: lecturer-student relationship, students poor study habit, teacher factors (teacher quality), shortage of qualified teachers, inadequate teaching facilities in schools, home factor, school environmental factors and many others. Despite their efforts, students continue to exhibit poor performance in the subject. In this vein, lecturer factor has been linked to be one of the cause of student poor performance, in this sense there is need to look into the impact of lecturer-student relationship on academic performance in mathematics in the university because of effective relationship elicits effective learning. Teacher is the principle initiator of learning. The problem of this study therefore, is to evaluate the impact of lecturer-student relationship on academic performance in Ordinary Differential Equation in Joseph Sarwuan Tarka University, Makudi Benue State, Nigeria.

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