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Influence of Students' Perception on Mathematics Anxiety in Tertiary Institution in Benue State

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ABSTRACT

This study investigated the influence of students' perception on mathematics anxiety in tertiary institution in Makurdi Local Government Area of Benue State. Three research questions were generated and one hypothesis was tested at 0.05 level of significance. The study employed a survey research design. A total of 60 students were sampled from the selected secondary schools. The instrument used for this study was a self-developed questionnaire. The questionnaire was titled "The influence of students perception on Mathematics anxiety in tertiary institution". Descriptive statistics of mean and standard deviation was used to answer the research questions. While chi-square was used to test the hypothesis at 0.05 level of the significance. The study found out that Students were found to be anxious in mathematics class going by the wrong perception they have about mathematics.. The study also found out that Both male and female students have the same perception about mathematics anxiety.

1.INTRODUCTION

Mathematics is one of the most important subjects in university admission criteria. Thus, it is made compulsory for all students to offer at the JAMB examinations before they can be admitted into any higher institution of learning in Nigeria. This is because Nigeria as a nation solely depends upon Mathematics as one of the most important subjects that could help the nation meet her objective for science and technological advancement (Jegede, 2002). It is a fact that students have a very low interest in Mathematics. Students hate or dislike Mathematics. Even at secondary schools level in Nigeria students do not attend Mathematics lessons (Fatola, 2005). Those who attend the mathematics lessons do not pay attention to the teacher. Most of the students do not practice Mathematics on their own neither do they solve Mathematics problems on their own.

Anxiety refers to a feeling of distress or alarm caused by danger or pain that is about to happen (Tobias, 2006). In intensity it varies from a mild sense of apprehension to paralyzing terror. In anxiety, there is always the desire to shrink, to get away or retreat from the exciting cause. The stimuli for anxiety are many and varied. In early infancy any sudden or intense stimuli like loud and sudden noise, unexpected jerk, and flash of bright light or loss of support may cause anxiety though there are large individual differences. Any sudden change in the environment, which the individual regards as threatening and for which he is unprepared, produces anxiety. When the threatening situation is removed or controlled, and the danger real or imaginary has passed, anxiety disappears. Also, as activities or experiences expand or interests and abilities grow, the number and kinds of anxiety increase. But as the power of adjustment through experience increases many of childish anxiety disappear. Some anxieties are as a result of conditioning effect. They will have to be reconditioned by attaching pleasant circumstances and experiences with situations and objects, which causes the anxiety. Praise or rewards attached to or associated with fearful tasks or situations will help to reduce anxiety. There are some anxieties where the best thing to do is to act as the anxiety suggests, that is, get away. This would be true in the case of a poisonous snake, and mad dog. However, with other anxieties we need to face it, we must have courage. Example of such is Mathematics anxiety. The phenomenon of Mathematics anxiety is variously referred to as Mathemaphobia or Mathematics pathological fear in Mathematics (Stephen, 2007). Pathological Mathematics anxiety therefore mean a behaviour disorder in which an individual becomes progressively unable to resist the impulse to fear Mathematics. It is an abnormal and persistent dread of Mathematics; sufferers usually experience undue anxiety even though they may rationally realize that Mathematics does not pose a threat commensurate with their anxiety (Amazigo, 2000). Stephen (2007), describes Mathematics anxiety as an academic disease whose virus has not yet been diagnosed for an effective treatment in the class, though the symptoms of this anxiety are always expressed on the faces of the learners in Mathematics classes. This disease (otherwise known as pathological fear), is communicable as it is usually distributed to sciences that are Mathematics related.

The following research questions were asked to guide the study;

1. What is the extent of mathematics anxiety in mathematics education students in tertiary institution in Makurdi L.G.A?
2. What is the influence of Students perception on mathematics anxiety in tertiary institutions in Makurdi L.G.A?
3. What is the influence of male and female Mathematics Education students perception on Mathematics anxiety in tertiary Institution in same state?

The following hypothesis was formulated and tested at 0.05 level of significance

1. There is no significant difference between the perception of male and female Mathematic Education students on mathematics anxiety in tertiary institutions in Makurdi L.G.A.

2.Methodology

The research design adopted for this study was the survey research design. The study was conducted in Makurdi Local Government Area of Benue State. The population for this study comprised of 200 students andthe sample size for this study comprised 60 students of JOSTUM and BSU. The instrument used for this study was a self-developed questionnaire titled "The influence of students perception on Mathematics anxiety in tertiary institution". The study was analysed using mean and standard deviation to answer the research questions while chi-square was used to test the hypothesis at 0.05 level of the significance.

3.Results

The data obtained from the questionnaire given to the students in order to ascertain the influence of students' perception on mathematics anxiety in tertiary institutions in Benue State is given below.

Table 1: Mean and Standard deviation of the response to the extent of mathematics anxiety in students

S/N	Items	$\bar{x}$	S.D	Remark
1.	Mathematics makes me feel comfortable and easy	2.88	0.87	Agreed
2.	Mathematics is the most dreaded subject for me	2.17	0.91	Disagreed
3.	I feel nervous when I am about to do mathematics class	2.45	0.91	Disagreed
4.	I am afraid to ask questions in mathematics class	2.17	0.89	Disagreed
5.	My mind goes blank when lecturers ask mathematics questions	2.20	0.88	Agreed
6.	I would prefer mathematics as one of my subjects in higher studies	2.52	1.00	Agreed
7.	Solving mathematics problems is always pleasant for me	2.82	0.77	Agreed
8.	Mathematics doesn't scare me at all	2.63	0.94	Agreed
9.	I feel worried before entering the mathematics class	2.00	0.86	Disagreed
10.	I find mathematics interesting	2.97	0.80	Agreed
Grand Mean		**2.50**	**0.88**	

Table 1 shows the extent of mathematics anxiety in mathematics education in tertiary institution. Item 10 was accepted with the highest mean of 2.97 and 0.80 as standard deviation. Item 1 had a mean score of 2.88 and with standard deviation of 0.87. Since 2.88 is greater than 2.50, this implies that item 1 is accepted. Item 6, 7 and 8 were accepted with mean scores of 2.52, 2.82 and 2.63 respectively. Item 2,3,4,5 and 9 were rejected with mean scores of 2.17, 2.45, 2.17, 2.20 and 2.00 respectively. The grand mean is 2.50 with standard deviation 0.88. This implies that students are anxious in mathematics class.

Table 2: Mean and Standard deviation of the influence of student's perception on mathematics anxiety

S/N	Items	$\bar{x}$	SD	Remark
1.	My perception that mathematics is difficult Makes me anxious in learning mathematics	2.63	0.99	Agreed
2.	My perception that I can never understand mathematics makes me afraid of the subject	2.08	0.91	Disagreed
3.	My continuous practice of mathematics help to reduce my perception on mathematics anxiety	3.28	0.76	Agreed
4.	My perception on the influence of peer group on mathematics anxiety affect my performance in mathematics	2.22	0.98	Disagreed
5.	I think the ability to communicate by the mathematics lecturer in teaching the subject helps to calm mathematics anxiety	3.32	0.70	Agreed
6.	I don't have a good foundation in mathematics due to	2.07	0.97	Disagreed
	family encouragement on the perception on mathematics anxiety			
Grand Mean		**2.60**	**0.89**	

Table 2 show the influence of student's perception on mathematics anxiety in tertiary institution. Item 15 was accepted with the highest mean of 3.32 and 0.70 as standard deviation. Item 13 had a mean score of 3.28 and standard deviation of 0.76. Since 3.28 is greater than 2.5, item 13 is accepted. Item 11 was also accepted with a mean score of 2.63 and 0.99 as standard deviation. Item 12, 14 and 16 were rejected with mean scores of 2.08, 2.22 and 2.07 respectively. The grand mean is 2.60. This implies that student's negative perception of mathematics affects their positive performance in mathematics.

Table 3: Mean and Standard deviation of the influence of male and female student's perception on mathematics anxiety

	Q11		Q12		Q13		Q14		Q15		Q16		Grand Mean
Gender	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	
Male	2.67	1.04	2.00	0.93	3.25	0.87	2.19	0.98	3.28	0.82	2.19	1.01	**2.60**
Female	2.58	0.93	2.21	0.88	3.33	0.57	2.25	0.99	3.38	0.43	1.87	0.90	**2.60**

Table 3 shows the influence of male and female student's perception on mathematics. The grand mean for both male and female student is 2.60. This shows that both the male and female students have same perception on mathematics anxiety. To show if the perception of male and female students on mathematics anxiety is not significant, hypothesis 1 was tested at 0.05 level of significance.

Table 4: **Chi-square showing the analysis of perception of male and female Mathematics students on mathematics anxiety**

Item	df	x^2	Asymp.Sig
Chi-square	10	20.667^a	0.000

Table 4 shows that the x^2 calculated is 20.667^a and sig (p-value) is 0.000. Hence p>0.05, the null hypothesis is accepted. This implies that there is no significant difference between the perception of male and female Mathematic education students on mathematics anxiety in tertiary institutions in Makurdi Local Government Area. This means that both the male and female students have the same perception in mathematics anxiety.

4.Discussion of Findings

Table 1 shows the extent of mathematics anxiety in mathematics education in tertiary institution. Item 10 was accepted with the highest mean of 2.97 and 0.80 as standard deviation. Item 1 had a mean score of 2.88 and with standard deviation of 0.87. Since 2.88 is greater than 2.50, this implies that item 1 is accepted. Item 6, 7 and 8 were accepted with mean scores of 2.52, 2.82 and 2.63 respectively. Item 2,3,4,5 and 9 were rejected with mean scores of 2.17, 2.45, 2.17, 2.20 and 2.00 respectively. The grand mean is 2.50 with standard deviation 0.88. This implies that students are anxious in mathematics class. The findings of this study is in line with the findings of Olayinka (2010) who conducted a meta-analysis to scrutinize the construct mathematics anxiety in 151 studies in university of Lagos and found out that there exists anxiety amongst students in mathematics class. The results were simple: higher achieving students had less mathematics anxiety and as grade levels increased, so did the level of mathematics anxiety in students.

Table 2 show the influence of student's perception on mathematics anxiety in tertiary institution. Item 15 was accepted with the highest mean of 3.32 and 0.70 as standard deviation. Item 13 had a mean score of 3.28 and standard deviation of 0.76. Since 3.28 is greater than 2.5, item 13 is accepted. Item 11 was also accepted with a mean score of 2.63 and 0.99 as standard deviation. Item 12, 14 and 16 were rejected with mean scores of 2.08, 2.22 and 2.07 respectively. The grand mean is 2.60. This implies that student's negative perception of mathematics affects their positive performance in mathematics. This agrees with the finding of Shuen (2013) who carried out a study on perception and perception of students in mathematics and found out that students who shy away from learning mathematics often perform poorly in examination.

Table 3 shows the influence of male and female student's perception on mathematics. The grand mean for male and female student is 2.15 and 2.30 respectively. From the grand mean, it is seen that the female students trend mathematics more than the male students. To show if the difference between the perception of male and female students on mathematics anxiety is significant, hypothesis 1 was tested at 0.05 level of significance. Table 4 shows that the x^2 calculated is 20.667^a and sig (p-value) is 0.000. Hence p>0.05, the null hypothesis is accepted. This implies that there is no significant difference between the perception of male and female Mathematic education students on mathematics anxiety in tertiary institutions in Makurdi Local Government Area. This means that both the male and female students have the same perception in mathematics anxiety. This result disagrees with the findings of Luen& Thomas who carried out a study on the influence of students' perception on mathematics anxiety and found out that the male students are found to be less anxious is mathematics class than their female counterpart and thus perform better.

5.Conclusion

The study found out that Students were found to be anxious in mathematics class going by the wrong perception they have about mathematics. The study also found out that Both male and female students have the same perception about mathematics anxiety.

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