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RESEARCH ARTICLE

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THE IMPACT OF TEACHING METHODS ON ACADEMIC PERFORMANCE OF SECONDARY SCHOOL STUDENTS IN NIGERIA

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ABSTRACT

The teaching methods used by teachers determine the extent to which students perform in their academics. This study examines the relationship between teaching methods and academic performance of secondary school students in Nigeria. The study adopted descriptive research design but with mixed approaches of data collection and analysis. Target population comprised of 180 students in three secondary schools in Nassarawa Local Government, Kano. A total of 60 respondents were selected. The research instrument was a questionnaire. The research question was answered using descriptive statistics of percentages and pie chart. The hypotheses were subjected to inferential statistics of X^2 tested at the level of significance of 0.05. The findings from this study revealed that most of the teachers' methods of teaching have a great effect on students' academic performance; based on these findings, Student-Centered Method and Teacher-Student Interactive Method were recommended in order to improve students' academic performance.

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INTRODUCTION

A teacher is an important figure in teaching and learning process, because he/she follows the curriculum so that throughout the year all the important knowledge is provided to the students. The main purpose of teaching at any level is to bring out a significant change in the learner (Tebabal & Kahssay, 2011). Most of the traditional methods were teacher-centered with no activity for the learners making them passive and therefore obtaining knowledge from the teacher without building their engagement level with the subject matter and the approach is least practical, more theoretical and memorizing (Tebabal & Kahssay, 2011). Student-centered approaches which are more effective are more encouraged because they embrace the concept of discovery learning (Brindley, 2015). Most teachers today apply the student-centered approach to promote interest, analytical research, critical thinking and enjoyment among students (Hesson & Shad, 2007). Transferring knowledge requires teachers to use the appropriate method and pedagogy that best suits the learner and suit the objectives and desired outcomes. The poor academic performance by majority of the students in various subject areas is basically linked to the application of ineffective teaching methods by teachers to impart knowledge to learners and therefore teachers need to be conversant with

numerous teaching strategies (Adunola, 2011). Teaching is a profession of those who impart knowledge or skill, especially in an elementary or a secondary or in a university. According to Ayeni (2011), teaching can be defined as a systematic process of transmitting knowledge, attitudes and skills in accordance with professional principles. In the traditional epoch, many teaching practitioners widely apply teacher-centered method to impart knowledge to learners comparative to student-centered methods. Until today, questions about effectiveness of teaching methods on students learning have consistently raised considerable interest in the thematic field of education research (Hightower et al., 2011). Adgoke in Ogide (2017) states that in our tertiary institutions, teachers use mainly the lecture method which is a teacher-centered method and the implication is that learners are passive and learning tends to be superficial. Asikhia (2010) found that, qualifications of teachers and students' environment factors do not influence students' poor performance but teachers' methods of teaching influence poor performance. According to Adunola (2011), regular poor performance by majority students is fundamentally linked to application of effective teaching methods by teachers to impart knowledge to learners. Ndirangu (2007) opined that, the choice of a particular method of teaching by the teacher is determined by the number of factors which includes the content to be taught, the objectives

which the teacher plans to achieve, availability of teaching and learning resources and the ability and willingness of the teacher to improvise if conventional teaching aids are not available for the evaluation and follow – up activities to check individual learner differences. According to Ayeni (2011), teaching is a process that involves bringing about desirable changes in learners so as to achieve specific outcomes. In order for the method used for teaching to be effective, Adunola (2011) maintains that teachers need to be conversant with numerous teaching strategies that take recognition of the magnitude of complexity of the concepts to be covered.

Research Problem: Some problems affecting the students' academic performance are the state of significance of the content, the sustainability of the method and perhaps, the teacher who handles both the content and method.

Research Objectives: The primary objective of this study was to investigate the relationships between the effectiveness of different teaching methods on students' academic performance.

Null Hypothesis

- The significant relationship between discussion method and students' academic performance
- There is no significant relationship between demonstration method and students' academic performance

Significance of the study: The study will provide the teachers with insight on the different diverse teaching methods as a basis for improvement in their instructional practice so that they can enhance performance.

Review of empirical studies: Theories of teaching and learning have long emphasized the important role teachers play in supporting students' development in areas beyond their core academic skill for example, in their conceptualization of high quality teaching. Teaching methods are patterns of teacher behavior that occur either simultaneously or in sequence in a verified way. Choosing specific teaching methods that best achieves course objectives is one of the most important decisions a teacher faces. Knowing what methods are available and what objectives each method is best suited for, help teachers make this decision more easily. Pianta and Hamre (2009) describe a set of emotional supports and organizational techniques that are equally important to learners as teachers' instructional methods. Teachers can help students become more self – reliant, motivated to learn, and willing to take risks by making his/her instructional methods to be emotionally supportive and safer channel. Abubakar (2015) reiterated that the major role of instructional materials is to provide a wide range of alternative avenues through which the same unit of instruction can be presented to learners. He submitted that the effective utilization of instructional aids in schools, makes students to learn in a meaningful way and so, they become actively involved intellectually, perceptually and physically. According to Ayeni (2011), teaching is a continuous process that involves bringing about desirable change in learners through appropriate methods. Chang (2010) sustained that teaching methods work effectively especially if they suit learners' needs since every learner interprets and responds to questions in a unique way.

Teacher-centered methods: Under this method, students simply obtain information from the teacher without building their engagement level with the subject being taught (Boud&Feletti, 1999). The approach is least practical, more theoretical and memorizing (Teo& Wong, 2000). It does not apply activity based learning to encourage students to learn real life problems based on applied knowledge. Since the teacher controls the transmission and sharing of knowledge, he should attempt to maximize the delivery of information while minimizing time and effort. As a result, both interest and understanding of students may get lost. To address such shortfalls, Zakaria, Chin and Daud (2010) specified that, teaching should not merely focus on dispensing rules, definitions and procedures for students to memorize, but should also actively engage students as primary participants.

Student-centered method: With the advent of the concept of discovery learning, many scholars today widely adopt more supple student-centered methods to enhance active learning (Greitzer, 2002). Most teachers today apply the student-centered approach to promote interest, analytical research, critical thinking and enjoyment among students (Hesson& Shad, 2007). The teaching method is regarded more effective since it does not centralize the flow of knowledge from the lecturer to the student (Greitzer, 2002). Daluba (2013) opined that for better performance of students, the use of activity stimulating and student-centered approach like demonstration method instead of depending on the conventional approach like lecture method need to be embraced. Student-centered approaches which are more effective are more encouraged because they embrace the concept of discovery learning (Brindley, 2015).

Teacher-student interactive method: This teaching method applies the strategies used by both teacher-centered and student-centered approaches. Most teachers today apply the teacher – student interactive approach to promote interest, analytical research, critical thinking and enjoyment among students (Hesson & Shad, 2007). The method encourages the students to search for relevant knowledge rather than the lecturer monopolizing the transmission of information to the learners. According to Walker (2003), the discussion along with learning material method when properly used can develop in the students' higher learning skills. It can give the students increased capability for generalization and transfer, a sense of the relevance of learning, and the ability to analyze, synthesize, and apply what is learned (Walker, 2003).

METHODOLOGY

The study is a survey type of descriptive research. The population for the study comprised of 180 students of some selected science and technical secondary schools in Kano. A sample of 60 students was selected randomly from Government Secondary School, KauraGoje and ECWA Secondary in Nassarawa Local Government, Kano State. The research instrument was questionnaire. The Questionnaire is based on the students' perception on the relationship between academic performance and teachers' method of teaching. 60 copies were distributed including additional 20 copies to the students that are not part of the sample to ensure reliability of the questionnaire. The research questions were answered using descriptive statistic of mean and percentages.

The effectiveness of teaching methods was analyzed using inferential statistics of chi – squared analysis.

RESULT AND INTERPRETATION

Descriptive statistics: From the table above the average percentage of the student positive relationship between the effectiveness of different teaching method in his academic performance is 75%.The average percentage of the students who said teaching methods have no effect on academic performance is 23.5% while the average of the undecided students is 1.5%. This showed that the students’ perception on teaching methods have great effects on their academic performance and is further clarified in the pie chart Table 1.

Table 1. Frequency counts and percentages of students’ perception on the effect of teaching methods on students’ academic performance

S/N	Items	YES		NO		UNDECIDDED	
		F	%	F	%	F	%
1	Different teaching methods have effect on my academic performance	48	80	10	17	2	3
2	Do you prefer any teaching method?	42	70	18	30	0	0
Average total			75		23.5		1.5

Table 2: Shows the relationship between discussion method and students’ academic performance

Response	Observed (OB)	Expected (EXP)	OB - EXP	$\frac{(OB - EXP)^2}{EXP}$
Yes	47	20	27	36.45
No	10	20	-10	5
Undecided	3	20	-17	14.45
Total	60	60		55.9

Table 3. Shows significant relationship between demonstration method and students’ academic performance

Response	Observed (OB)	Expected (EXP)	OB - EXP	$\frac{(OB - EXP)^2}{EXP}$
Yes	45	20	25	31.25
No	9	20	-11	6.05
Undecided	6	20	-14	9.8
Total	60			47.1

Research Hypothesis

Hypothesis one: There is significant relationship between discussion method and students’ academic performance. The data obtained in Table 2 revealed that there was a positive significant relationship between discussion method and students’ academic performance ($\chi^2 = 55.9 > p = 5.991$). The null hypothesis is therefore is rejected. Therefore, there is a significant relationship between discussion method and students’ academic performance.

Hypothesis two: There is no significant relationship between demonstration method and students’ academic performance. Table 3 presents summary of Chi – square report on the effect of demonstration method on students’ academic performance. The table reveals that $\chi^2 = 47.1$ with the level of significance of 0.05 and degree of freedom of 2, the chi – square $\chi^2 = 47.1 > r = 5.991$. The chi – square statistics was also found to be significant. The null hypothesis of no significant relationship between demonstration method and students’ academic performance was therefore rejected.

This result is in line with Daluba (2013) who opined that for better performance of students, the use of activity stimulating and student-centered approach like demonstration method instead of depending on the conventional approach like lecture method need to be embraced. Hence, relationship between demonstration method and students’ academic performance was statistically significant.

Discussion of the findings: From the findings, it was revealed that a significant relationship exist between discussion method and students’ academic performance ($\chi^2 = 55.9, r = 5.991$). This result is in agreement with Wiggins (1987) who reported that interaction between the teacher and students during the teaching and learning process encourages the students to search for knowledge rather than the lecturer/teacher monopolizing the transmission of information to learners. This shows that there was a significant relationship between method and students’ academic performance. In addition, the findings show that a significant relationship exist between demonstration method and students’ academic performance in table 3 ($\chi^2 = 47.1, r = 5.991$). This result agrees with Daluba (2013) who averred that for better performance of students, the use of activity stimulating and student-centered approach like demonstration method instead of depending on the conventional approach like lecture method need to be embraced. This is in line with Mundi (2006) that opined that demonstration teaching method is advantageous in the following ways: it saves time and facilitates material economy; is an attention inducer and a powerful motivator in lesson delivery; students receive feedback immediately through their own products; it gives a real-life situation of course of study as students acquire skills in real-life situations using tools and materials; it help to motivate students when carried out by skilled teachers and it is good in showing the appropriate ways of doing things. This result revealed that the demonstration method has great effect on students’ academic performance.

Conclusion

Education is the process of imparting or acquiring knowledge, developing the powers of reasoning and judgment and generally of preparing oneself or others intellectually for the future and the method used in the process greatly determines the extent at which the aim will be achieved. Based on the result obtained in the study, teaching method has a great effect on students’ academic performance and the analysis shows that the discussion and demonstration teaching methods greatly improve the students’ academic performance than the lecture method which was passive and teacher centered. Teaching methods are patterns of teacher behavior that occur either simultaneously or in sequence in a verified way. The conventional or traditional approach has been widely used from year to year as a primary method of transmitting information to students (Ekwueme, Popola & Orin, 2012). The approach includes the lecture or expository method, discussion method, demonstration method and so on. In the conventional method, the teacher communicates ideas to learners by direct verbal discourse sometimes called talk and chalk method. The approach is teacher centered, encourages rote learning and fails to motivate the students’ interest and achievement in their academics. Choosing specific teaching methods that best achieves course objectives is one of the most important decisions a teacher faces. Knowing what methods are available and what objectives each method is best suited for, help

teachers make this decision more easily. It should be noted that discussion and demonstration methods help teachers plan more, talk less and students learn more while interacting with groups. The result also proves that, discussion and demonstration methods promote learners' participation and build the required level of reasoning among students.

Recommendation

Research evidence from previous studies indicates that, a student-centered learning environment seems to produce higher-level learning outcomes more efficiently than a traditional teacher-centered environment (Tynjala, 1998). Based on the outcomes of this study, the following recommendations were made. Teaching would be highly effective if the teacher starts to use innovative teaching techniques like the discussion and the demonstration method. Teachers should therefore learn how to use two or more techniques together during a learning experience so as to achieve the desired objective.

- Teachers should create an atmosphere conducive to learning in order to enhance the development of students' learning experiences.
- Teachers should also increase their knowledge of various instructional strategies in order to keep students engaged and motivated throughout the learning process.

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