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Relationship between Learning Style and Academic Performance of Senior Secondary School Students in Igbo-Etiti Local Government Area, Enugu State

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Abstract

The study determined the relationship between learning style and academic performance of secondary school students in Igbo-Etiti local government area. Descriptive survey research design was used. The study population was 2,905 senior secondary class two students in Igbo-Etiti LGA. Sample size of 229 respondents was selected using simple random sampling technique. Barsch's learning style inventory was adapted and used as instrument for data collection. Findings showed that more than half of the respondents were aged above 15years (57.20%), 57.2% were females while (42.8%) of them were males. Data shows that up to 75.1% of the respondents prefer kinesthetic learning style, (12.7%) prefer auditory learning style while (12.2%) prefer visual learning style. For English language, (50.7%) of the respondents had high performance, 29.30% had very high performance and 20.10% had average performance. For mathematics, 56.30% of the students had high performance, 11.40% had very high performance, 30.60% had average performance and 1.70% had poor performance. At $p>0.05$ level of significance, no significant relationship existed between the learning style preferences of the respondents and their performance in English language and Mathematics. Based on findings, it was recommended that students should be made aware of their learning style preferences so they can better understand themselves. The teachers should also tailor their instruction to fit the learning styles of students, that is, the teacher should make use of instructional materials that will appeal to different senses.

Keywords: Learning style, Academic performance, Adolescents, Enugu State.

Introduction

Academic performance has, for the past decades, been the center of interest in educational research. Academic performance refers to the achievement of students in a school subject as designated by a score or mark obtained in a test or examination (Olaitan et al., 2002). In other words, academic performance is always denoted by score which represent the amount of learning acquired, knowledge gained or skills and competencies developed in the school subject (Onuigbo, 2012). It is usually measured by standardized and proficient tests and examinations

developed for school subjects; and numbers (in the context of grading) are used to indicate whether a student has been successful or unsuccessful in mastering academic content and skills (Nzesei, 2015). The academic performances of students in Nigeria have over the years been reported to be on the decline. In a research carried out by Nuthana and Yenagi (2009) the causes of poor academic performance among Nigerian students identified factors such as low students' intellectual ability, lack of goals, low self-esteem, state of health, motivation, anxiety and state of mind, un-conducive environment for studying, unavailability of textbooks and well-equipped libraries, low socio-economic status of the family and poor study habit as major factors of poor academic performance.

A survey carried out in some selected schools in Nigeria by Ajani and Akinyele (2015) identified inadequate teachers, problem of inadequate facilities in the school, problems caused by poor parental background, unfavorable government policies and low educational sector funding as some major causes of low academic performances in students. A number of learning-related concepts, such as teaching methods and instructional activities have been a focus of attention when attempting to identify factors affecting students' academic performance. Compared to the extensive work done on these areas, one vital area often neglected is the exploration of students' learning style.

Learning style has been defined as the characteristics, strengths and preferences in the way students receive and process information. It refers to the fact that every person has his or her own method or set of strategies when learning (Gokalp, 2013). Both logic and published research suggest that students taught in a manner matched to their learning style preferences tend to learn more than students taught in a highly mismatched manner (Lin & Fawzi, 2011). Additionally, a compatible learning style with the teaching method of a course instructor enables the students to retain the information much longer and apply it more effectively. In other words, since there are individual differences in learning style, adapting academic materials to these differences will facilitate learning and thus help increase learning benefits, especially for low and moderate achieving students (Damayandi, et al., 2011). Researches by educational psychologists have revealed many learning style models/theories from which different types of learning style were identified. However, this paper is anchored on Neil Fleming's learning style model (NFM). The Neil Fleming's Model identified visual, auditory and kinesthetic styles. Visual learners are learners who prefer to learn using sense of sight. Auditory Learners are learners who prefer instructions that deal with sense organ of hearing. Kinesthetic learners learn by being involved in the activities of the learning process (Nja et al., 2019).

Graf, et al. (2010), reported that students' learning outcome could be improved if proper learning style dimensions could be taken into consideration when developing any learning or instructional process. There is a strong intuitive appeal in the idea that instructors, course designers and educational psychologists should pay closer attention to students' learning styles – by diagnosing them, by

encouraging learners to reflect on them and by designing teaching and learning interventions around them (Nzesei, 2015). When this is done, students would understand their strengths and weaknesses and consequently learn more effectively and take responsibility for their own learning. In turn, teachers would be able to consider appropriate teaching strategies to enhance students' learning strengths (Rogers, 2009). Acquainting students with their learning styles can enhance their awareness of some of their natural learning strengths, and it can also alert them to learning needs which, if unaddressed, could create academic difficulties for them (Lin & Fawzi, 2011). Therefore, understanding students' learning styles and their impact on their academic performance is important for it is the first step in ensuring good and satisfactory students' achievement.

There have been many attempts to address the problem of low academic performance of students and some factors have been identified among which are teaching methods, intelligence, test anxiety, cultural and socio-economic background, organization, opportunity, emotional intelligence, determination, personality, attention, memory, reasoning, learning styles and motivation. The poor academic performance of students has contributed to the tremendous and rapid decline in standard and quality of education in Nigeria over the years from the primary up to the tertiary level (Arong & Ogbadu, 2010). A Study conducted in Osun state, Nigeria showed that among the 21 schools sampled for senior school examination results, only three schools were able to produce potential candidates for higher education admittance with percentages 48%, 40% and 50% (Akinsolu, 2010). In addition, the products of primary schools have been discovered to be unable to write their own names, just as products of secondary schools are unable to copy down notes on the board with correct spellings. It is equally alarming and unbearable to hear that graduates of our tertiary institutions find it difficult to write standard formal letters for employment (Arong & Ogbadu, 2010). It is evident that learners have not yet learned how to learn or discovered their preferred learning styles for different learning material, content or subject. Also, teachers might not have understood the diversity of their learners in a typical classroom, and they might keep on embracing the same traditional teaching styles in every context (Nzesei, 2015). In consequence, students might become bored and inattentive in class, do poorly on tests, get discouraged about the subject, the curriculum, and themselves, and in some worse cases drop out of school. It is therefore imperative to understand learning style preferences among the learners and how they relate to academic performance so as to develop effective and successful learners and that is the purpose of this study.

Objectives of the study: The broad objective of the study was to determine the relationship between learning style preferences and academic performance of senior secondary school students in Igbo-Etiti local government area, Enugu State. The specific objectives were to:

1 identify the learning style preferences of senior secondary school students in Igbo-Etiti L.G.A;

2 determine the academic performances of the students; and
3 determine the relationship between the learning style preferences and academic performance of the students.

Methodology

Study area: The study was carried out in Igbo-etiti Local Government Area, Enugu State. It is an Igbo speaking area whose indigenes are traditionally farmers, with a reasonable portion being civil servants. The local government is home for numerous primary and secondary educational institutes. According to Obollo zone Post Primary School Management Board - PPSMB (2021), there are 14 secondary schools in Igbo-Etiti L.G.A.

Study design: The study adopted a descriptive survey research design in which information is gathered from a representative of the entire population using questionnaire, interview, and observation (Sileyew, 2019).

Study population: The population for this study comprised of 2,905 senior secondary school students in the 14 secondary schools in Igbo-Etiti L.G.A (PPSMB, 2021).

Sample size selection: Sampling was done in multiple stages. In stage one, fifty percent of the 14 schools in the local government was calculated, giving a total of seven schools that was selected from the list of schools using systematic random sampling. Stage two involved calculating the sample size for the study. The sample size of 229 was calculated using the Yamane (1967) formula below.

$$n = \frac{N}{1 + N(e)^2}$$

Where N = total number of population under study
n= sample size
e= margin error (0.05)

In stage three, proportionate sampling was used to obtain the number of students to be sampled in each of the selected schools. Finally, simple random sampling was used to select the required number of respondents from each school.

Instrument for data collection: A structured questionnaire and a standardized instrument were used for data collection. The structured questionnaire had two sections. Section A contained items on the socio-economic/demographic characteristics of the respondents while section B contained a proforma for collecting students' performance grades on English language and Mathematics. The second instrument was adapted from Barsch's Learning Style Inventory (BLSI) for assessing students' learning styles. The BLSI is a simple and convenient set of 24 questions, that tests for visual, auditory and kinesthetic learning styles. The instrument had 3-point rating scale; 'often preferred'= 3, 'sometimes preferred'= 2 and 'seldom preferred' = 1'. The students were required to select the description/statement that suit them and write the score of their selected items.

Data collection method: Two hundred and twenty-nine (229) copies of the questionnaire were hand distributed to the respondents by the researchers and a research assistant. The contents were explained to the respondents and they filled the questionnaire on the spot, taking average time of fifteen minutes per respondent. All the copies of the questionnaire were retrieved giving a

100% return on the administered questionnaires.

Data and statistical analysis: The data from the completed questionnaires were coded into Statistical Product and Service Solution (SPSS) version 22.0. Each learning style in the BSLI have eight items on the questionnaire. The respondents' responses for each style were summed up and the style with the highest score was regarded as their preferred learning style. Student's grades in English and Mathematics was collated and categorized as very high performance (A), high performance (B), average performance (P) and low performance (F). Descriptive results were presented in frequencies and percentages. Chi-square was used to define relationships among variables. Significance was accepted at 95% precision ($P < 0.05$).

Result

Demographic characteristics of the respondents

Table 1 below shows the demographic characteristics of the respondents. More than half of the respondents were aged between 11-15years (42.8%) while 57.2% were aged above 15years. Fifty-two percent (52.0%) were female and 42.8% of them were male. Majority (71.2%) of the respondents specialized in the sciences, 27.2% in art and 1.3% in commercial subjects, and a few (17.9%) had parents that are university degree holders.

Table 1: Demographic data of the respondents

Variable	Frequency	Percentage
Age		
11-15	18	42.8
Above 15	131	57.2
Total	**229**	**100**
Gender		
Male	110	42.8
Female	119	52.0
Total	**229**	**100**
Area of specialization		
Science	163	71.2
Art	63	27.5
Commercial	3	1.3
Total	**229**	**100**
Educational qualification of father		
First school leaving certificate	88	38.4
Secondary school certificate	89	38.9
NCE/OND	11	4.3
University degree	41	17.9
Total	**229**	**100**

Learning style preferences of the respondents

Figure 1 shows the learning style preferences of the respondents. Data show that a greater proportion (75.1%) of the respondents prefer kinesthetic learning style, 12.7% prefer auditory learning style while 12.2% prefer visual learning style.

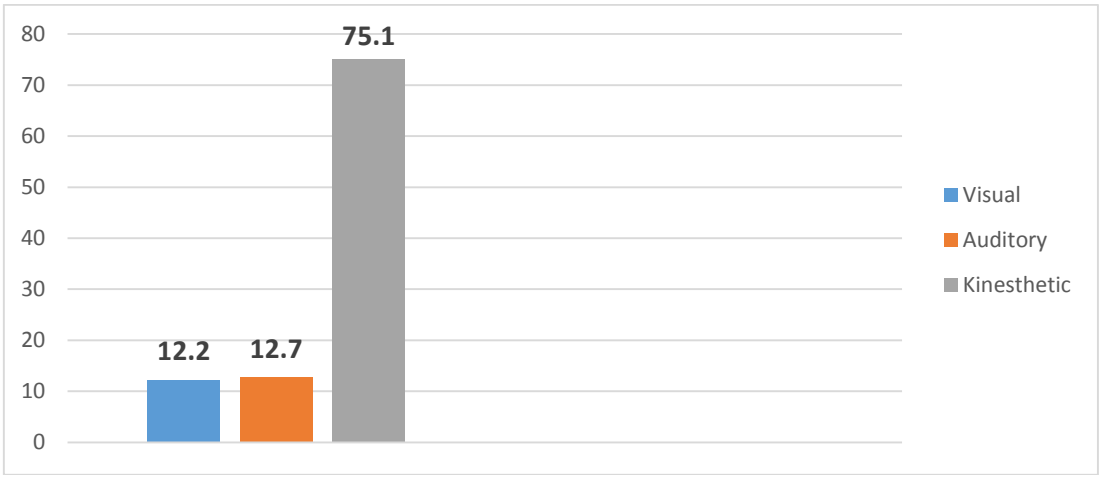

Fig 1: Percentage responses on the learning style preferences of the respondents

Academic performances of the respondents

Table 2 below shows the academic performance of the respondents. For English language, 50.7% had high academic performance, 29.3% performed very highly academically and 20.1% had average academic performance. For mathematics, 56.3% performed highly academically, 11.4% had very high academic performance, 30.6% had average academic performance and 1.7% performed poorly academically.

Table 2: Academic performance of senior secondary school students

	Very high F (%)	High F (%)	Average F (%)	Poor F (%)	Total F (%)
English Language	67 (29.30)	116 (50.70)	46 (20.10)	0 (0)	229 (100)
Mathematics	26 (11.40)	129 (56.30)	70 (30.60)	4 (1.70)	229 (100)

F = frequency; % = percentage

Table 3 shows the relationship between learning style preferences and academic performance of the respondents. At $p < 0.05$ significance level, there was no significant relationship between the academic performance and learning style preferences of the students. However, 76.7% of the respondents who preferred kinesthetic learning style had high academic performance in mathematics and 75.9% in English language.

Table 3: Relationship between academic performance and learning styles of the students

Subject	Visual F (%)	Auditory F (%)	Kinesthetic F (%)	Chi-square value
Mathematics				1.81
Very High Performance	4 (15.40)	4 (15.40)	18 (69.20)	
High Performance	14 (10.90)	16 (12.40)	99 (76.70)	
Average	9 (12.90)	9 (12.9)	52 (74.3)	
Poor Performance	1 (0.50)	0 (0.50)	3 (7.50)	
Total	28 (12.20)	29 (12.70)	172 (75.10)	
English Language				1.90
Very High Performance	9 (13.40)	11 (16.40)	47 (70.10)	
High Performance	14 (12.10)	14 (12.10)	88 (75.90)	
Average	5 (10.9)	4 (8.7)	37 (80.4)	
Total	28 (12.2)	29 (12.7)	172 (75.1)	

F = frequency; % = percentage

Discussion

Learning style preferences of the respondents

Proponents of learning-style assessment contend that optimal instruction requires diagnosing individuals' learning style and tailoring instruction accordingly. This is because, the instructional method that proves most effective for students with one learning style is not the most effective method for students with a different learning style (Pashler, et al., 2009). Findings from the study show that a greater proportion of the respondents preferred kinesthetic and auditory learning style while fewer numbers of them preferred visual learning style. Auditory learners have preference for discussion, asking questions, classes and tutorials while kinesthetic learners prefer demonstrations and case studies (Flemimg & Bonwell, 2019; Nja et al., 2019) which are the most common methods of instruction in secondary schools according to Porozovs, et al. (2015). This may be why the auditory and kinesthetic learning style were mostly preferred by the respondents. Visual learning involves use of pictures or graphically based forms of communication in the form of charts, graphs, diagrams, maps and videos (Flemimg & Bonwell, 2019; Nja et al., 2019). It is possible that its low preference might be attributed to the gross unavailability of visual instructional materials in Nigerian schools (Ashaver & Igyuve, 2013). However, this finding is in contrast with that of Singh, et al. (2015) which reported that the respondents were mostly visual learners.

Academic performance of the respondents

Academic performance is a measurable and observable behaviour of a student within a specific period (Yusuf et al., 2016). In addition, it consists of scores obtained by a student in an assessment such as class exercise, class test, mid-semester, mock examination, class exam and examination result. This study found

that the students generally had good academic performance based on the English and Mathematic results in the Basic education certificate examination. More than half of the students recorded high performance; denoted by B grade while a good number of them had outstanding performance (A grade) in both subjects. Only very few of them had below average performance. This could be as a result of the learning styles adopted by schools and also the attitude and skillfulness of the teachers while teaching the students. David et al. (2019) opined that teacher experience and professional training have a significant impact on students' performance.

Relationship between learning style preferences and academic performance of the students

The study found that no significant relationship existed between the learning style preferences and academic performance of the respondents. Although all type of learners had high performance, the kinesthetic type of learners had relatively higher performance in both English language and Mathematics than the auditory and visual learners. This finding is expected since practical learning involved in the kinesthetic style makes it easier for students to retain the knowledge they acquired, for a longer period of time than auditory and visual learning. As stated by Cuthbert (2006), understanding the students' learning styles is important for allowing adjustment in the educators' pedagogic approaches.

Conclusion

The respondents mostly preferred kinesthetic learning style followed by auditory learning style and a few of them preferred visual learning style. Nevertheless, respondents generally recorded high academic performance based on the result of the two core subjects offered at the basic education examination. In addition, kinesthetic learners were found to have higher performance in the two subjects than the auditory and visual learners suggesting that kinesthetic learning style may offer better strategy to retain the knowledge acquired.

Recommendations

The following recommendations have been made based on the findings of the study:

1. Teachers should know the learning style of the students before teaching. He or she can apply the three learning styles used in this study to teach the student for effective understanding.
2. It will help the students to know the causes of their learning problems and make necessary personal adjustments.

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