



PREFERENCE OF LEARNING STYLES AND ITS RELATIONSHIP WITH ACADEMIC PERFORMANCE AMONG JUNIOR SECONDARY SCHOOL STUDENTS IN DUTSE LOCAL GOVERNMENT AREA, JIGAWA STATE, NIGERIA

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ABSTRACT

The thrust of the study was to investigate the preference of learning styles and its relationship with academic performance among Junior Secondary School Students in Dutse Local Government Area, Jigawa state, Nigeria. The study employed survey design. The statistics used for analysis of data were mean, percentages and Pearson Product Moment Correlation Coefficient. From thirty Junior Secondary Schools in the Local Government Area, ten schools were randomly selected. Out of a total students population of two thousand, two hundred students in the selected schools, three hundred and twenty seven students were randomly selected using simple hat and draw method. This sample size was determined using *Krejcie and Morgan (1970)* table for determining sample size. Two research instruments were used for data collection, namely Barsch leaning style inventory and Academic Performance Test. The result revealed that 217 of the student's preferred kinesthetic learning style, 66 of them preferred visual style while 44 of them preferred auditory style. It was also noted that the learning style of the students affected their academic performance because the performances of students correlated with the learning styles they preferred. It is recommended that learning should be made more practical since most of the students learnt by doing.

Keywords: Preference, Relationship, Learning style, Junior, Students, Academic, Performance.

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Contribution/ Originality

The study is one of the few studies which have investigated preference of learning styles among secondary school students in Nigeria with Jigawa State as a focal point. Correlating learning styles with academic performance among Junior secondary school students further enhances teaching and learning in Dutse.

1. INTRODUCTION

Education is the bed rock of every nation since her development is measurable by the level of education of the citizens. Nigeria as a developing country has invested much in education to make sure that every citizen has at least education up to secondary school level for effective interaction and productive life. This dream is yet to be realized due to poverty and ignorance. Secondary education in Nigeria is a program of six academic years. The first three years is referred to as Junior Secondary, at the end of this the students write the Junior Secondary School Certificate Examination (JSSCE). The last three years is referred to as Senior Secondary, at the end students write the Senior Secondary School Certificate Examination (SSSCE). Both junior and senior secondary schools are supposed to among other things equip students with skills that can make them self-reliant where there is no job.

Many students at this stage have no good approach to learning. They need to be guided for optimum achievement. This is one of the reasons why their learning styles are been studied.

Learning Style refers to the preference or disposition of an individual to perceive and process information in a particular way or combination of ways. It is the way individuals process, absorb and retain information or skills, regardless of how that process is described. It is dramatically different for each person. The idea that people learn differently is acceptable and probably had its origin with ancient Greeks. Educators have for many years, noticed that some students prefer certain methods of learning to others. These dispositions, referred to as learning style, form a student's unique learning preference. Teachers in planning of small group and individualized instructions must consider it. According to [Cesarian and Eileen \(1993\)](#) learning style is one factor that should be considered when planning teaching strategies but not to ignore the complexity of the learning process. In effect other factors like the environment, intellectual ability, emotions etc should also be put into consideration. The application of holistic strategy will lead to better academic performance. [Dunn and Grigg \(2000\)](#) assessed learning style to be the way students begin to concentrate on processes, internalize and remember new and difficult academic information and is composed of both biological and developmental characteristics that make the identical instructional environments, methods and resources effective for some learners and ineffective for others. They believe that learning is the way an individual master new and difficult skills. [Riding and Rayner \(1998\)](#) argued that the purpose in cognitive styles and learning strategies is to describe individual differences based on two models. One model comprises 4 basic cognitive modes derived from the intersection of list-analytic dimensions and a verbalizer imager dimensions. The second model is based on learning style.

[Walker et al. \(2005\)](#) see learning style as an approach to problem solving, which can lead to new experiences, skills and behavioral change. Individual differ in their ways of dealing with problem that confront them. Human life is characterized by problems which require swift solution. The quest for solution becomes the motivating factor which adds to a formulation of a style of thinking that can lead to problem solving. This style of problem solving is a kind of fixed pattern of behavior called learning style. Similarly, [Cheron \(2001\)](#) opined that learning styles is more or less a consistent way in which a person perceives, conceptualizes and recalls information. Many researchers like [Barch \(1996\)](#) have described how children assimilate information through sensory modalities as learning styles. His learning style inventory considered three sensory channels through which children learn. They are Auditory, Visual and Kinesthetic. Children who preferred auditory learning learn more through what they hear so they prefer listening to the teacher, forming discussion groups etc. Visual learning style involves learning by seeing. Children who prefer this style learn through pictures, diagrams, demonstrations, films charts etc. Kinesthetic learning style involves learning through physical experiences like touching, doing, holding, drama and practical. This model of learning (VAK) deals mainly on preference rather than definite style because most children make use of all the three styles to solve different problems in different situations. However one style must be dominant in a given individual ([Constantinidon and Baker, 2002](#)).

Academic performance is the degree of pass or failure of students over a period of time. It could be for a day, week, month, term or session. [Aremu and Soken \(2003\)](#) described poor academic performance as a performance adjudged by examiners as falling below an expected standard which could be caused by various variables like age, socio economic status, disability etc. [Asikhia \(2010\)](#) lamented that the poor performance of Nigeria students in various levels of education is a source of concern to many.

Teaching and learning in developing countries like Nigerian still have a lot of areas to explore to improve achievement of the students in lessons and the output of teachers in service delivery. Learning style of the students is one of such areas. Knowing the best and fastest way of making the learner to learn makes a whole lot of difference in teaching. This is why the researchers considered it necessary to investigate on the preferred learning style of students in Dutse and the relationship of the learning styles on their academic performance.

1.1. Research Objective

The formulated objectives of this study were to find out:

The preferred learning styles of Junior Secondary School (JSS) students in Dutse Local Government Area, Jigawa State, Nigeria. If there is significant relationship between learning styles and academic performance of JSS students in Dutse Jigawa state, Nigeria.

1.2. Research Questions

The following research question were used to guide the study

Which learning styles do Junior Secondary School Students in Dutse LGA, Jigawa state, Nigeria prefer?

Is there any significant relationship between JSS students' academic performance and their learning styles?

2. METHODS

2.1. Research Design

A survey method was employed in this study. A survey design was preferred because it is good for getting the opinion of people of issues of concern. It also covers a good percentage of the research population.

2.2. Study Area (Demography)

Jigawa state is one of the thirty six (36) states of Nigeria, it has twenty seven (27) Local Government areas. The capital is Dutse. Jigawa state was created on 27th August 1991. It is situated in the North Western part of the country. It is mostly populated with Hausa Fulani. Dutse is currently the largest city in Jigawa state with a population of 153,000. Dutse is mainly populated with famers. The high economic activities going on in the area has attracted people from far and near. Western education has recently become popular among the people. There is a Federal University established in 2011, a campus of Jigawa state Polytechnic and many secondary and primary schools in Dutse at present.

2.3. Population of the Study

Population of the study was drawn from thirty Junior Secondary Schools in Dutse Local Government Area of Jigawa state Nigeria with student's population of 10,150. The population of the study was homogenous in their language, culture and religion.

Table-1. The Schools included in the study.

S/N	Names of Schools	JSS Students Population	Sample Size
1.	Limawa Junior Secondary School	290	43
2.	Fagoji Junior Secondary School	200	30
3.	Galmawa Junior Secondary School	263	39
4.	Kachi Junior Secondary School	170	25
5.	Garu Junior Secondary School	280	42
6.	Sakwaya Junior Secondary School	230	34
7.	JigawarTsada Junior Secondary School	150	22
8.	Dr. NuhuSanusi Junior Secondary School	247	37
9.	Chamo Junior Secondary School	170	25
10.	Karnaya Junior Secondary School	200	30
	Total	2,200	327

Source: Jigawa state Ministry of education.

2.4. Sampling Techniques

Both the schools and the subjects for this study were drawn through simple random sampling techniques, Hat and Draw Method (HDM) was used in selection of ten schools, this was done by inscribing the names of the schools

on pieces of paper. These were roll in and mixed well in a container. The total number of students in the ten selected schools was 2,200 out of which a sample of 327 was randomly selected using simple HDM. Sample was determined using Krejcie and Morgan (1970) table of determining sample size.

2.5. Instrumentation

Two instruments were employed in this study. They are, an adapted version of Barsch learning style inventory and academic performance test. Barsch learning style inventory was developed by Barsch Jeffery in the year 1996, in Novato, United States of America. It is a formal, self-resorting instrument that provided student with an indication of their relative strength and weaknesses through different sensory channels, auditory, visual, tactile and newly revised kinesthetic. The inventory has 24 statements each of which has been assigned scores, 5 point for often, 3 point for sometimes and 1 point for seldom. Barsch learning style inventory was validated by Herell (2006) in his Ph.D research at Florida State University. The reliability of Barsch learning inventory was established using a test re-test method. This was done by administering the instrument in two schools that were not part of the study for pilot study. It was re-administered after the interval of three weeks. The two sets of scores were correlated using Pearson's Product Moment Correlation Coefficient and the coefficient alpha for the instruments was 0.72.

The academic performance of the students was tested using JSS 3 past question papers in English language and Mathematics. The justification for using the past question in English language and mathematics was because they are standardized and are offered by all students and the sampled students were also drawn from the JSS 3 students. The academic performance tests for the two core subjects comprised of ten questions each. Three (3) marks were awarded for each correctly answered question. This test therefore had a maximum score of 60.

2.6. Data Presentation and Analysis

Table-2. Preferred learning Styles of Students.

Learning Styles	No of Students	Percentage
Auditory	44	13.46
Visual	66	20.18
Kinesthetic	217	66.36
Total	327	100.00

Source: Result from this study.

Table-3. Mean score of student according to their preferred learning styles.

Learning Styles	N	Mean
Auditory L/S	44	21.8
Visual L/S	66	22.6
Kinesthetic	217	30.8

Source: Result from this study.

Table 3 shows that learning styles and their academic performance were related. Student who preferred kinesthetic learning style performed better as indicated by the mean scores.

Therefore, the hypothesis which stated that there is no significant relationship between learning styles and academic performance of JSS 3 is rejected.

Table-4. Relationship between visual learning style and academic performance.

Variables	N	Mean	Standard Dev.	r-cal	r-crit	Decision.
Visual L/S	66	15.70	5.86	.415	.001	Sig.
Acad. Performance	66	22.59	8.91			

Source: Result from this study.

Table 4 above shows a significant relationship between visual learning style and academic performance since the r -cal value is higher than the r -crit value.

Table-5. Relationship between auditory learning style and academic performance

Variables	N	Mean	Standard Dev.	r -cal	r -crit	Decision.
Visual L/S	44	6.68	1.12	.336	.026	Sig
Acad. Performance	44	21.82	14.56			

Source: Result from this study.

Table 5 shows a significant relationship between auditory learning style and academic performance. The r -cal is higher than r -crit.

Table-6. Relationship between kinesthetic learning style and academic performance.

Variables	N	Mean	Standard Dev.	r -cal	r -crit	Decision.
Visual L/S	217	26.05	7.14	.743	.000	Sig.
Kinesthetic L/S	217	30.82	10.91			
Academic Perf.						

Source: Result from this study.

Table 6 shows a significant relationship between kinesthetic learning style and academic performance since the r -cal is greater than r -crit.

2.7. Summary of Findings

The following are the summary of the findings of this study

1. Kinesthetic learning style was preferred by majority of the students (217)
2. There is a relationship between learning styles and academic performance of JSS 3 students in Jigawa state Nigeria.
3. Each of the learning styles (visual, auditory and kinesthetic learning styles correlated significantly with academic performance).

3. DISCUSSION OF THE FINDINGS

The results showed that majority of the students preferred kinesthetic learning style as 217 out of 327 indicated that they learnt better with kinesthetic style. Kinesthetic learning style involves learning by doing. It involves activities like touching, holding, feeling etc. Children retain what they practiced in their memory more than what they memorized. Learners differ in many ways. These differences could be in cognitive, affective or psychomotor domains. The intellectual development, attitude and feelings can affect their academic performance positively or negatively. These differences have also been recorded in learning styles or strategies. Identifying effective learning styles for each student help both the student and the teacher for effective teaching and learning. [Cheron \(2001\)](#) provided insight into the reason why the study of learning styles and its knowledge has become imperative for teachers and students. He believed that knowledge of students learning style will help the teacher in planning, teaching, observing and reflecting on students' performance. He pointed out that students learn better and more quickly if the teaching method matches their preferred leaning style. Similar problem can be solved by different people using different styles. [Riding and Rayner \(1998\)](#) pointed out that the purpose of learning style is to describe individual differences. [Maureen et al. \(2001\)](#) in their research on cognitive learning style and academic performance in 19 first year courses with students placed at risk, found out that students who think sequentially preferred science and mathematics related courses while those who think randomly excelled in arts and social

sciences. The result obtained in this research also shows that there is a significant relationship between learning styles and academic performance. This result was in agreement with findings in the study of Gokalp (2013) who worked on the effect of students learning styles on their academic success. He found out that learning style correlated highly with academic success. Also, Rajshri (2013) who worked on the relationship between learning style and academic achievement of secondary school students found out that kinesthetic learning style was prevalent. He also found out that learning style highly correlated with academic achievement. Pello'on *et al.* (2013) who worked on the relationship between students learning styles and grade performance in ophthalmology course in Mayer University Temuco Chile came out with the finding that learning styles worked independently of the academic performance of the students. However they found that the medical students preferred visual learning style. This shows that the preference of learning style could be dependent on the program or course of study. These research findings therefore implied that learning style contributed immensely in the understanding and reproduction of what the teachers taught the students. It is therefore imperative that teachers must provide students with learning experience that will be in consonance with their varied styles of learning and therefore improve their academic performance.

3.1. Implication of the Study to Teaching and Learning

1. Teachers should make learning a more practical experience.
2. If students are kept busy, attention will be sustained, and this will improve learning.

4. RECOMMENDATIONS

Based on the findings of the present study the following recommendation were made

1. Teachers should create conducive atmosphere for learning and use the method of delivery that appeals to the senses using concrete objects, visual aids and physical materials to improve different learning styles of students
2. Activities that will improve visual and auditory learning e.g. use of charts and tape recorder should be introduced to help those students who prefer visual and auditory styles..

5. CONCLUSION

Discovering students learning styles is very essential in teaching and learning since learning styles have significant influence on their academic performance. Most students prefer learning by doing. Junior Secondary School Students in Dutse Local Government Area of Jigawa State have their specific learning styles but majority of them prefer Kinesthetics style. There was significant relationship between learning styles and academic performance of the students in Jigawa state, Nigeria.

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REFERENCES

- Aremu, O.A. and B.O. Soken, 2003. A multi-causal evaluation of academic performance. A Paper Presented at the 22nd Annual SAS, Malaysia form, Kuala Lumpur.
- Asikhia, S.O., 2010. Students and teachers perception of the causes of poor academic performance in Ogun state secondary schools, Nigeria; implication for counseling for national development. *European Journal of social Sciences*, 13(2): 229-242.
- Barch, J., 1996. Learning styles inventory Leveroni Court. Novato, USA: Academic Therapy Publications.

- Cesarian, T. and C. Eileen, 1993. Learning style research: A critical review of literature and implication for nursing education. *Journal of Professional Nursing*, 9(1): 34-40.
- Cheron, V., 2001. BBC/British council teaching english methodology learning style journal. Available from http://www.teachingEnglish.org.uk/think/methodology/learning_style [Accessed 20th Sept. 2008].
- Constantinidon, F. and S. Baker, 2002. Stimulus modalidy and verbal learning performance in normal aging. *Brain and Language*, 82(3): 296-311.
- Dunn, R. and S.A. Grigg, 2000. Practical approach to using learning in higher education. London: Bergin & Garvey.
- Gokalp, M., 2013. The effect of students learning styles to their academic success. *Scientific Research*, 4(10): 627-632.
- Herell, I.L., 2006. Using student characteristics to predict the persistence of community college students in on line course. Ph.D Thesis Florida State University College of Education.
- Krejcie, R.V. and D.W. Morgan, 1970. Determining sample size for research activities. *Educational and Psychological Measurment*, 30(3): 607-610.
- Maureen, J.B., L.R. Jonathan and A.S. Robert, 2001. Cognitive learning styles and academic performance in 19 first year university courses, successful students versus students at risk. *Journal of Education for Students Placed at Risk*, 6(3): 271-289.
- Pello'on, M., S. Nome and A. Ara'an, 2013. Relationship between learning style and academic performance offifth graders enrollment in the medical course. *Revista Brasileira De Oftalmologia*, 72(3): 181-184.
- Rajshri, V., 2013. Learning styles and academic achievement of secondary school students. Available from <http://www.voiceofresearch.org/doc/> [Accessed 05/08/2015].
- Riding, R. and S. Rayner, 1998. Cognitive styles and learning strategies understanding styles differences in learning and behavior. London: David Fulton Publishers.
- Walker, S.O., O.W. Sheila and R. Plomin, 2005. The nature/ nurture question. Teachers perception of how genes and the environment influence educationally relevant behavior. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 25(5): 509-516.

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