



# **RELATIONSHIP BETWEEN LEARNING STYLES AND THE ACADEMIC PERFORMANCE AMONG UNDERGRADUATES IN BENSON IDAHOSA UNIVERSITY, BENIN, EDO STATE**

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## ABSTRACT

The study investigated the relationship between learning styles and the academic performance among undergraduates in Benson Idahosa University, Benin, Edo State. Three research questions were raised and two hypotheses were formulated to guide the study. The study employed the ex-post facto research design. The target population comprised of all level 100 students in Benson Idahosa University, Benin City, Nigeria. The proportionate stratified and random sampling techniques were used to select 210 students from the seven faculties in the University. This is used as the sample for the study. The study made use of two instruments. The first one was the Learning Style Questionnaire which was adapted from Dunn and Dunn (1989) learning style model. It consists of 45 items on the 9 learning styles of students on a four-point Likert scale of strongly agree (4); Agree (3); Disagree (2) and Strongly Disagree (1) and the second instrument was the raw scores of the students in GST 112 – Philosophy, Logic and Human Existence, 2021/2022 first semester examination results. The first instrument was subjected to reliability procedure and it yielded an r-value of 0.89 which showed that the instrument was dependable for use. The instrument was administered and the results showed that: Majority of Benson Idahosa University undergraduates adopt the auditory learning style; there is a significant difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students and there is a significant relationship between learning styles and academic performance among Benson Idahosa University undergraduates. Based on the finding, it was recommended that importance of choosing the appropriate learning styles among undergraduates in Benson Idahosa University should be emphasized.

## INTRODUCTION

### Background to the Study

Education has been and still remains the most important instrument and link that connect a plain naïve, simple and inexperienced mind that is without any sense of wealth and richness, to a mind with surplus, full of techniques that are capable of achieving both personal and societal advancements. Education, in its higher level, is central to the acquisition of human knowledge in the development of the economy of any given nations. As a matter of fact, knowledge is seen in the modern world, as the determining factor and dynamic potency for economic growth and development while the university education is the main foundation of providing this needed knowledge (Federal Republic of Nigeria 2013). University education is best known to as the engine that produces quality manpower for the development of the nation. According to the Federal Republic of Nigeria (2013), the goal of higher education is pursued through its main functions and activities of teaching, research, dissemination of existing and new information, through the transmission of knowledge in training and reforming human minds measurable by sound academic performance by the learners.

Students' academic performance plays a vital role in every nation as it dictates the type of graduates that will have noteworthy impact to the society. According to Nja and Obi (2019), when student's academic achievement is poor, it therefore means that graduates from those schools may not be able to perform the duties they were trained to do. The collapsing buildings may be traceable to the civil engineer who did not have a good education while in school. Also, fire outbreak in homes and offices could be traceable to poor electrical engineers who did not

have good education and many patients dying in the hands of quack doctors who did not have good education during their school days.

The problem of student's poor academic performance has been a continuous plague fighting the society. In a bid to tackle this problem, some researchers examined the parents' factor while others investigated some school-related factors but still, the challenge still persists as something is yet to be fixed. Many researchers have examined the relationship between students' learning styles and their academic performance. Dalmolin A, Mackeivicz G, Pochapski M, Pilatti G, Santos F (2018) and Magulod Jr. (2019) conducted researches on the relationship between learning styles and students' academic performance and both found a significant relationship exists between the two variables. Ghaedi and Jam (2014) saw learning styles as the changes among learners in using one or more senses to understand, organize, and, retain experiences. The study of Fatemeh and Camellia (2018) revealed that students prefer learning with different learning styles because this helps them to improve in their academic performance. Learning styles is a term that is used to explain various ways that learners acquire knowledge. It seeks to give an explanation on how people learn. The issue of individual difference is very crucial in learning styles, as it works under the premise that no two persons learn in same way. There is the understanding that every student learns differently. Learning styles therefore is an individual's unique way of absorbing, processing, comprehending and retaining information and student's learning styles are influenced by environmental, emotional and cognitive factors alongside their previous experience (Nja, Umali, Asuquo & Orim, 2019).

It could be believable that the knowledge of different styles of learning adopted by students will eventually lead to the improvement of students' academic performance. According to Desire (2019), there are four main styles of learning styles adopted by learners. These include: the

visual learners - These are learners who prefer to learn using sense of sight. Materials in the learning environment that will appeal to the sense of sight like charts, diagrams, graphs, maps and other pictures or graphically based forms of communication are important. Media movies, PowerPoint presentations or videos are necessary to assist visual learners in learning. The second one is called Aural/Auditory learners - These are learners who prefer instructions that deal with sense organ of hearing. Spoken words during lectures, recordings, discussions are mechanisms that allow people with the sense of hearing to learn in their environments. The third one is Read/write learners. Learners in this category learn best when they read and write down on a paper or board what they have read. Their tools of choice are dictionaries, the Internet, PowerPoint, written responses and text signs while the last one is the kinesthetic learners. This group learns by being involved in the activities of the learning process. The method of instruction in this group includes demonstrations, simulations, videos and case studies (Nja, Umali, Asuquo & Orim, 2019).

If studies have shown that students' academic performance is poor and researchers, at different times, have investigated what could probably be responsible for the problem but still not solved, then, the researcher, in this study, seeks to find out if it could be that these learners are not employing the appropriate learning style. This is the thrust of this study.

### **Statement of the Problem**

The Benson Idahosa University, with her seven core values that end with academic excellence with godliness, is an institution that believes that human developments in his totality is the antidote to societal downfall and depravity, and so, never jokes with teaching and learning. Teachers are made to perform their duties under constructive supervision and students are not

left out in the university's academic culture and traditions but yet, students' academic performance is not improving as shown in examination results per semester or session. What could be responsible for this would not be instructional materials or resources because students have access to constant technological gadgets on campus. Learning styles have been investigated in other universities but not in Benson Idahosa University. Therefore, the statement of the problem is: could learning styles adopted by the students have influence on their academic performance in Benson Idahosa University?

### **Research Questions**

1. What are the learning styles adopted by Benson Idahosa University students?
2. What is the difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students?
3. What is the relationship between Benson Idahosa University undergraduate learning style and their academic performance?

### **Hypotheses**

1. There is no significant difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students.
2. There is no significant relationship between Benson Idahosa University undergraduate learning styles and their academic performance

### **Methodology**

The study employed the ex-post facto research design. This design was adopted because the study sought to compare qualities that already exist and therefore, the researcher needs no

manipulations of any variable(s) under study. The comparison here is between the independent variable (students learning style) and the dependent variable (academic performance). The target population comprised of all level 100 students in Benson Idahosa University, Benin City, Nigeria. The proportionate stratified and random sampling techniques were used to select the sample for the study and the total number of 210 level 100 students, constituting about 10% of the entire population was used as sample for the study. The basis for stratification was the students' field of study which includes selections from the faculties of Agriculture and Agricultural Technology; Medicine and Surgery, Social and Management Sciences, Arts and Education, Sciences, Engineering and Law. This sample comprised 95 males and 115 females.

The study made used of two instruments. The first one was the Learning Style Questionnaire which was adapted from Dunn and Dunn (1989) learning style model. It consists of 45 items on the 9 learning styles of students on a four-point Likert scale of strongly agree (4); Agree (3); Disagree (2) and Strongly Disagree (1) and the second instrument was the raw scores of the students in GST 112 – Philosophy, Logic and Human Existence, 2021/2022 first semester examination results. The first instrument was pilot-tested using 30 students outside the proposed sample for the study. Data collected was subjected to analysis using the Cronbach Alpha statistical procedure and the instrument yielded as r-value of 0.89 which showed that the instrument was dependable for use.

### **Data Analysis**

Regarding the learning styles adopted by Benson Idahosa University students, the frequency statistics was used to answer the question. As regards to hypothesis one, the students' independent t-test was used to test the difference between the learning styles of male and female

students in Benson Idahosa University as this is suitable to when comparing two independent means and finally, the Pearson product Moment Correlation statistics was used to test the relationship between Benson Idahosa University undergraduate learning style and their academic performance.

The instrument was administered and the results are as follows:

### Results/Findings

Research Question 1: What are the learning styles adopted by Benson Idahosa University students?

**Table 1: Descriptive statistics showing the learning styles adopted by Benson Idahosa University students**

Leaning Styles	Frequency	Percent	Valid Percent
VISUAL	40	19.0	19.0
AUDITORY	96	45.7	45.7
READ/WRITE	47	22.4	22.4
KINESTHETIC	27	12.9	12.9
Total	210	100.0	100.0

The data in the Table 1 above showed that out of 210 students used as sample for the study, 96 constituting 45.7% adopted auditory learning style while 47 constituting 22.4% adopted read/write style of learning. Also, 40 constituting 19.0% adopted visual learning style and lastly 27 constituting 12.9 % adopted kinesthetic style of learning. It can be concluded, from the table therefore that, majority of Benson Idahosa University adopted the auditory learning style followed by read/write learning style, then, few adopted visual learning style while fewer students adopted kinesthetic learning style.



Research Question 2: What is the difference in the mean rating of academic performance based on learning styles adopted by Benson Idahosa University students?

**Table 2: Descriptive statistics showing the mean difference in the academic performance based on learning styles adopted by Benson Idahosa University students**

LEARNING STYLES	Mean	N	Std. Deviation
VISUAL	33.8750	40	2.84819
AUDITORY	35.3333	96	3.63221
READ/WRITE	55.6383	47	4.40072
KINESTHETIC	44.7407	27	2.48987
Total	40.8095	210	9.32568

The information the table 2 showed that out of 210 students used as sample for the study 40 that adopted visual learning style had an academic mean score of 33.87 with standard deviation of 2.84 while 96 that adopted auditory learning style had the academic mean score of 35.33 with standard deviation of 3.63. The 47 students who adopted read/write style of learning had the mean score of 55.63 with standard deviation of 4.40 and finally 27 students that adopted kinesthetic style of learning had the mean score of 44.74, standard deviation of 2.48. It can be deduced, from the table therefore that, the highest mean score which can be taken as the best style of learning among Benson Idahosa University students is read/write style. This is followed by the kinesthetic style. Auditory style became next and lastly the visual style of learning. It can be concluded that the best style of learning among the students in Benson Idahosa university based on the output of the data collected from the sample is the read/write style of learning.

Research Question 3: What is the relationship between learning styles and academic performance among Benson Idahosa University undergraduates?

**Table 3: showing the descriptive statistics of relationship between learning styles and academic performance among Benson Idahosa University undergraduates**

Variable	$\bar{x}$	SD	r	r <sup>2</sup>	%
Learning Styles	2.29	0.92	0.66	0.44	44%
Academic Performance	40.80	9.32			

n = 210

r<sup>2</sup> = coefficient of determination

Results presented in Table 3 show the relationship between learning styles and academic performance among Benson Idahosa University undergraduates. It was observed from the data in Table that the mean score of learning style was 2.29 with a standard deviation of 0.92 while students' academic performance had a mean score of 40.80 with a standard deviation of 9.32. The Table also showed that there was a high positive relationship (0.66) between the two variables under study. The coefficient of determination (r<sup>2</sup>) associated with the correlation coefficient of 0.66 was 0.44. This implied that learning styles has 44% positive influence on the academic performance among Benson Idahosa University. This is an indication that other factors influencing the academic performance among students in Benson Idahosa University not studied accounted for 56%.

### Testing of Hypotheses

Hypothesis 1: There is no significant difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students.

The summary of the test of hypothesis one is presented in Table 4

**Table 4: showing one-way ANOVA statistics of difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Decision
Corrected Model	15554.636	3	5184.879	407.395	.000	Reject Ho
Intercept	306836.497	1	306836.497	24109.259	.000	
LEARNING STYLES	15554.636	3	5184.879	407.395	.000	
Error	2621.745	206	12.727			
Total	367914.000	210				
Corrected Total	18176.381	209				

a. R Squared = .856 (Adjusted R Squared = .854)

The information in Table 4 showed the statistical difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students. It is shown that the observed difference in the mean ratings of academic performance based on learning styles adopted by the is significant at 0.00 ( $F=407.39$ ,  $df=3$ ). Since 0.00 is less than 0.05 alpha level of significance, the hypothesis which says there is no significant difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students is not accepted. This implied that there is a significant difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students.

Hypothesis 2: There is no significant relationship between Benson Idahosa University undergraduate learning styles and their academic performance

**Table 5: Pearson Product Moment Correlation of the relationship between Benson Idahosa University undergraduate learning styles and their academic performance**

n = 210

Variable	$\bar{x}$	SD	r	r <sup>2</sup>	p-value	Decision
Learning Styles	2.29	0.92	0.66	0.44	0.00	Reject Ho
Academic Performance	40.80	9.32				

r<sup>2</sup> = coefficient of determination

Results presented in Table 5 show the relationship between learning styles and academic performance among Benson Idahosa University undergraduates. It was observed from the data in Table that the mean score of learning style was 2.29 with a standard deviation of 0.92 while students' academic performance had a mean score of 40.80 with a standard deviation of 9.32. The Table also showed that there was a high positive relationship (0.66) between the two variables under study. The coefficient of determination (r<sup>2</sup>) associated with the correlation coefficient of 0.66 was 0.44. This implied that learning styles has 44% positive influence on the academic performance among Benson Idahosa University and the relationship is statistically significant at 0.00 since this significant value is less than 0.05 the alpha level of significance. Therefore, the hypothesis which states that there is no significant relationship between learning styles and academic performance among Benson Idahosa University undergraduates is rejected. It can therefore be concluded that there is a significant relationship between learning styles and academic performance among Benson Idahosa University undergraduates.

### **Summary of Findings**

1. Majority of Benson Idahosa University undergraduates adopt the auditory learning style
2. There is a significant difference in the mean ratings of academic performance based on learning styles adopted by Benson Idahosa University students.
3. There is a significant relationship between learning styles and academic performance among Benson Idahosa University undergraduates

### **Discussion of Findings**

It is observed from the table discussing the finding from research question one that majority (45.7%) of the sampled students in Benson Idahosa University adopt the auditory style of learning. It could be believed that they would be passive as the lecturer does the teaching in the class and when students or learners are not actively participating in the teaching and learning processes, there could be a block against their understanding or what is known as passivity effect. The result also showed that students prefer reading/writing and kinesthetic styles of learning. This finding is in agreement with the findings of Fatemeh and Camellia (2018) whose investigation revealed that students prefer studying with different styles of learning.

The second finding showed reading/writing style of learning as having the highest mean and followed by kinesthetic (demonstration) learning style. This is also in line with the finding of Fatemeh and Camellia (2018) as combination of styles of learning can make a better understanding of lessons taught and also reading/writing adding to kinesthetic or demonstration during lesson can stick learning into the memories of the learners and that could equally facilitate easy and quick recovery.

Another finding in this study showed there is a significant difference in the mean ratings of academic performance based on learning styles adopted among Benson Idahosa University as shown in Table 4 ( $F = 407.39$ ,  $df = 3$ ,  $P\text{-value} = 0.00$ ). This may be implied from the table that the style(s) of learning a student adopts have a long way in determining the academic output of the said student.

The last finding of the study revealed that there is a significant positive relationship between learning styles and students' academic performance. This agrees with the findings of Fatemeh and Camellia (2018) as well as Dalmolin et al (2018) and Magulod Jr. (2019) who conducted researches and found a significant positive relationship between learning styles and academic performance.

### **Conclusion**

The study was set to investigate the relationship between learning styles and academic performance among Benson Idahosa University undergraduates. It can be concluded from the investigations that learning styles have a significant positive relationship with the academic performance of the undergraduates in Benson Idahosa University.

### **Recommendations**

Based on the findings, it is recommended that importance of choosing the appropriate learning styles among undergraduates in Benson Idahosa University should be emphasized as the finding showed that this is having a significant relationship with their academic achievement.

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