# Learning Styles and Teaching Strategies as Influence on Pupils' Performance in Basic Science in Ife East Local Government

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**ABSTRACT:** The performance of students in basic science is a proof of scholarly capacity. It ought to anyway be noticed that the danger of unfortunate pupils' presentation in Basic science in the general public is certainly not brief one. It is because of this that this study was conceptualized. Self-arranged instrument was utilized to gauge learning styles and showing methodologies on pupils' performance in basic science. Total numbers of three hundred respondents were sampled for the study. Findings show that the procedures embraced by the educators in the review were students focused. The review shows that the understudies' performance in basic science was sub optimal: The outcome uncovered that learning style adopted by the students altogether affected their performance in basic science ($\beta = 490$; $t = 2.955$; P 0.05) didn't. It was suggested in this that legislative and non-legislative organizations, school executive and troughs, guardians, educationist, advocates, specialists and the approach producer ought to recognize these variables while resolving the issue of performance of learners in basic science

**KEYWORDS:** School environment, parental academic achievement

## 1. INTRODUCTION

Human development is a continuous process which depends on available resources. It is a fact that formal education determines the individual development socially, politically, economically in our dear society. That is why Jaiyeoba (2007) viewed education as a vector determining the development of any society. According Jaiyeoba education is the determinant of economic, intellectual, social and cultural empowerment of an individual in particular and society in general. The contribution of education to development of human characters and attitude is as it's important as its ability restructure human potentials in fulfilling their desired goals. Globally, education is divided into three levels such that primary, secondary and the tertiary education. The primary education provides the basic and fundamental level knowledge required for further education. It help the learners develops in their intellectual, physical, moral, social and emotional outfit to be a befitting citizens that capable of pursuing secondary and tertiary education and to become useful citizens to themselves and community at large (Quadri, 2001). Nowadays, technology has enriched global development in basic science is considered a fundamental phenomenal of technology and the sciences (Ogunsanwo, 2003; Rasheed, 2008). However, the implication of the present age is that now nation can develop not more than the development of science and technology of such nation. In opinion of Olorundare (2003) science is been regarded as the determinant of the quality of life citizens, economic, health and security of nations any nation.

These contribute greatly to shifting of attention of educators, guardians and researchers exploration of ideas towards learners' performance in basic science and technology. That is why Olukoya (2013) reported that students academic performance served the criteria through which teaching-learning qualities of teachers and students excellences were

measured. She explains further that pupils academic performance serves the yardstick that measure pupils' ability and the teachers' understanding of subject contents and the application of the teaching methods.

Meanwhile, continuous pupils' low performance in basic science at primary level of education which further determine poor turnout and interest of pupils in basic science and science related courses. This therefore, requires attention of researchers to investigate factors contributing to pupils' performance in basic science or science related courses. Studies carried out by individuals, governmental and non-governmental organizations revealed that direct instruction teaching method used by some primary teachers basic science classes contribute to low performance of students in basic science in Nigeria (Olosunde, 2009; Salami, 2009). That is why the conventional method of do-it-as-I-have-done-it was discouraged in basic science especially at primary level of education. However, this method is considered incompetence for pupils to explore their capacity (Awofala, 2002; Amobi, 2003; Olosunde, 2009). Having made basic science a core subject at primary level, it is therefore imperative looking at factors hindering pupils' performance in the subject. Hence this study investigates learning styles, and teaching strategies as influencing academic performance of primary school pupils.

## 2. STATEMENT OF THE PROBLEM

It is evidence in Nigeria's education system that primary school pupils' academic performance in basic science (just as in other areas) is still declining despite numerous reforms in the education system to improve the standard of education. Pupils' attitude toward learning of science is deteriorating steadily to the extent of reflecting in their performance in both internal and external examinations. These have been attributed to method of instruction that resulted to pupils learning styles. Although due individual differences pupils' learning styles vary. The teachers at primary school this and adopt different teaching strategy considering their pupil's learning styles as well as their individual differences. This further makes it difficult for some learners to grab the instruction easily. Therefore this study determined learning styles and teaching strategies as influencing pupils' performance in basic science.

## 3. RESEARCH QUESTIONS

1. Will there be relative influence of teaching strategies and learning styles on academic performance of pupils in basic science?
2. Will there be composite effect of teaching strategies and learning styles on academic performance of pupils in basic science?

## 4. METHODOLOGY

### 4.1 Research Design

This study adopted correlation survey type research design. This design is proficient to investigate the union between variables. This study investigated relationship between styles of learning, teaching strategies and pupils performance in basic science. This is why this study adopts correlation research design.

**4.2 Population of the Study**

This study was conducted with involvement of all public and private primary school teachers and upper primary pupils in Ife East Local Government Area of Osun State.

**4.3 Sampling Techniques and Sample**

This study area has seventy six (76) private primary schools with thirty (30) public primary schools, giving a total number of 106 primary schools out of which ten (10) schools were randomly selected using a stratified random sampling technique. Five (5) of the schools are privately owned and the other five (5) are public schools. Intact classes were used for this study. In the case of some selected schools with more than one arm of primary 6 classes, one of the arms was selected. Primary six (6) pupils were purposively selected for this study because at this stage, they should be capable of completing the questionnaire properly without much difficulty. Also, ten (10) basic science teachers that handled the selected classes were also selected in the study.

**4.4 Instruments**

**Pupils' Learning Style Questionnaire (PLSQ)**

The pupils' learning style questionnaire developed by Reid (2005) was adapted by the researcher for data collection on pupils' learning styles. The questionnaire is divided into two sections, section A deals with the demographic section of the pupils, including age, class, school while Section B contains items learning styles and teaching strategies for the pupils. It is a twenty (20) items Likert-type questionnaire on pupils preferred learning styles and it was developed using Yes or No to know the pupils' opinion to each of the questions.

**Classroom Teaching Strategies Rating Scale (CTSRS)**

The classroom teaching strategies rating scale **(**CTSRS**)** was a self-designed instrument; it was used to collect information about basic science teacher's instructional strategies. The CTSRS is divided into two sections. Section A deals with demographic information about the teachers. Section B contains fifteen (15) items on the strategies used by the basic science teachers. All the items in the instrument were generated from literature related to teaching strategies of teachers. It was rated on a 5-point Likert where 1,2,3,4 and 5 would stand for poor, fair, average, good and excellent respectively.

**Basic Science Achievement Test (BSAT)**

Basic Science Achievement Test (BSAT) is a self-designed objective achievement test containing 25 items with options A-E based on Basic Science from curriculum. The 25 items were generated using the basic science curriculum for first term since the research was carried out in the first term.

**Method of Data Analysis**

This study adopted multiple regressions to test for joint and relative effects of the two independent variables on academic accomplishment of pupils in basic science.

## 5. RESULT

**Research Question 1**

Will there be relative influence of teaching strategies and learning styles on academic performance of pupils in basic science?

**Table1: The Relative Influence of Teaching Strategies and Learning Styles on the Academic Performance of Pupils**

| Model | Unstandardized coefficients | | Standardized coefficients | T | Sig. | Remark |
|---|---|---|---|---|---|---|
| | B | Std. Error | Beta (β) | | | |
| (Constant) | -32.897 | 15.157 | | -2.170 | .039 | |
| Learning style | 1.310 | .443 | .490 | 2.955 | .006 | Sig |
| Teaching strategies | .079 | .108 | .121 | .730 | .472 | NS |

a. Dependent Variable: Academic performance

Table 1 reveals that pupils' performance in basic science is significantly influenced by learning style of the learners. Meanwhile, teaching strategy did not:

**Research Question 2:**

Will there be composite effect of teaching strategies and learning styles on academic performance of pupils in basic science?

**Table2: The Composite Effect of Teaching Strategies and Learning Styles on the Academic Performance of Pupils**

| Statistics | Value |
|---|---|
| R | .509 |
| R square | .259 |
| Adjusted R square | .204 |
| Std. Error of Estimate | 5.14730 |

**ANALYSIS OF VARIANCE**

| Source of Variance | Sum of Squares | Df | Mean Square | F | Sig. | Remark |
|---|---|---|---|---|---|---|
| Regression | 250.009 | 2 | 125.004 | 4.718 | .007 | Sig. |
| Residual | 715.358 | 297 | 26.495 | | | |
| Total | 965.367 | 299 | | | | |

From table2, teaching strategies and learning styles correlate positively with the performance of pupils in basic science (R = 0.509). This implies that the two variables have positive relationship with academic performance of pupils. The adjusted $R^2$ value (0. 204) is an indication therefore that 20.4% of the total variance in the performance of pupils is accounted for in the academic performance. The remaining 79.8% is due to other factors not included in this study as well as residuals. Further, the R value of .509 is tested for significance and the R value is found significant ($F_{(2, 297)} = 4.718$; $P < 0.05$).

## 6. DISCUSSION OF FINDINGS

The finding revealed that learning style of adopted by respondent in this study have a potent contribution in their academic performance in basic science while teaching strategy was not significant on the academic performance. The finding is in tandem with study of Junko (2018); Felder and Spurlin (2005); Zhang and Sternberg (2005) whose study shows that pupils learning styles was reported affecting the behaviour and academic performance of pupils. Meanwhile, pupils have individual difference which transmitted and affect their learning, perception, interaction and even response to the learning environment. The study also corroborates the findings of Kia, Alipour, and Ghaderi (2001) which carried out among pupils in primary school in Iran, the result shows that pupils with visual learning style have the greatest academic achievement records. This study also in line with the study of Peacock (2001) who work on learning style preferences of Science pupils in class and the result shows pupils prefer kinesthetic learning styles that is learners-centre method among others, whereas the teaching strategy mostly adopted by Science teacher often suit auditory learners and it aids their academic performance.

The finding also showed that combination of teaching strategies and learning style contributes significantly to pupils' academic performance in basic science in primary schools. The teaching strategy chosen by basic science teachers in primary schools contribute to the academic performance of pupils. Basic science teachers who adopted activity based teaching strategy will get the pupils ready for the class and the attitude of the pupils towards basic science will increase since the subject is fascinating in nature, this will increase the thinking ability of the pupils. The finding corroborates Eshach & Fried, (2005) who found that pupils naturally explore their potentials through personal observation and thinking about nature. Their study stressed it further that pupils are motivated to explore the world around them, and early science experiences exposed to by the science teacher using activity teaching strategy and inquiry based can capitalize on this inclination also pupils that prefer learning by engaging with the activities (French, 2004).

## 7. CONCLUSION

The conclusions drawn from this study generally were that, teaching strategies and learning styles relatively contributed to pupils' performance in basic science. It was found that learning styles had significant and predictive influence on pupils' performance in basic science in primary school. However, kinesthetic form of learning style was identified as the most common learning style used by the primary school pupils followed by visual form of

learning style. Meanwhile, learner-centered teaching strategy was identified as the most common teaching strategies used by teachers of basic science.

## 8. RECOMMENDATIONS

According to the findings of this study the under listed recommendation were made

1. Teachers of basic science in primary school should be able identify styles of learning of their students and use teaching strategies that complements them. The knowledge and use of different teaching methods will greatly enhance the process of teaching and learning and make it effective and rewarding.
2. Students especially the low ability one should be identified by the teacher for the adoption of the most preferred teaching strategies that improve the learning outcome of the pupils irrespective of their learning styles.
3. Teachers should be given training on how best a concept in basic science as a subject should be taught using different instructional materials and teaching strategies.
4. Teachers should be provided with adequate instructional materials and facilities. This will enable them perform better and be more productive.

**REFERENCES**

Awofala, A.O. (2002). Cognitive style, concept mapping paradigms and achievement in secondary school mathematics. Med. Dissertation. Dept. of Teacher Education. University of Ibadan.

Eshach, H., & Fried M. N. (2005). Should science be taught in early childhood?. *Journal of Science Education and Technology*, 14(3), 315-336.

Felder, R.M. & Spurlin, J. E. (2005). Application, reliability, and validity of the index of learning styles. *International Journal of Engineering and Education.* 21(1), 103-112.

French, L. (2004). Science as the center of a coherent, integrated early childhood curriculum. *Early Childhood Research Quarterly*, 19(1), 138- 146

Jaiyeoba, A. O. (2007). Perceived Impact of Universal Basic Education on National Development in Nigeria. *International Journal of African and African American Studies* 6(1), 120-122.

Junko. (2018). Learning styles and error correction: How do learning styles affect students' perceptions towards error correction in a foreign language classroom?

Kia, S. K., Alipour, K. H., & Ghaderi, H. S. (2001). Relationship between thinking styles and scientific giftedness in Korea. *Journal of Secondary Gifted Education*, 16 (2–3), 87–97

Ogunsanwo, T. (2003). Homework mode and parental involvement in homework as determinants of primary school pupils learning outcomes in Mathematics in Ibadan North. PhD. Thesis. Dept. of Teacher Education, University of Ibadan.

Olukoya, S.M. (2013). Effect of self-concept, self-efficacy, study habit and peer pressure on the academic performance of senior secondary school students in biology. An (Unpublished) B.Ed. Project. University of Ibadan

Olosunde, G. R. (2009). Impact of constructivist model-based training programmes on pre-service teachers knowledge, attitude, classroom practices on students' learning outcomes in junior secondary school mathematics. PhD thesis, Dept. of Teacher Education, University of Ibadan.

Peacock, M. (2001). Match or mismatch? Learning styles and teaching styles in EFL. *International journal of applied linguistics*, 11(1), 1-20. https://doi.org/10.1111/1473-4192.00001

Quadri, K.( 2001). Introduction to Primary Education Studies. Ibadan: Glory Land Publishing Company (pp. 8-11).

Rasheed, O.S. (2008). The relative effects of integrated metacognitive and multicultural mathematics teaching schema on students' achievement in and attitude towards senior secondary mathematics. MEd. Dissertation. Dept. Of Teacher Education, University of Ibadan

Salami, I.A. (2009). An investigation into teaching methods in primary mathematics teacher training institutions. A paper presented in an International conference on Education for Sustainable Development, Faculty of Education, University of Ibadan.

Zhang, L.-f., & Sternberg, R., J. (2005). A threefold model of intellectual styles. *Educational Psychology Review*, 17(1), 2.