INFLUENCE OF CONVERGENT AND DIVERGENT LEARNING STYLES ON AGGRESSIVE BEHAVIOUR AND ACADEMIC PERFORMANCE AMONG SECONDARY SCHOOL STUDENTS IN KATSINA ZONAL EDUCATION

AHMED ALHASSAN & MARY IBRAHIM
Department of Educational Psychology and Counselling,
Federal University Dutsin-Ma, Katsina State;
aalhassan1@fudutsinma.edu.ng & marystephenwada@gmail.com

Abstract

This study examined the influence of convergent/ divergent learning styles on aggressive behaviours and academic performance of secondary school students in Katsina zonal education. The study employed descriptive survey research design. Nineteen Schools were randomly selected from the target population of 12,540 Students, 370 students were selected to make the sample for the study. The study adapted Hudsons's Test of Common Objects. and Academic Performance Test in Biology (TCO and APTE) at 0.87 reliability co-efficient. The statistics used for data analysis was the Linear Regression. Two hypotheses were tested at 0.5 level of significance, Result shows that the p-value (0.002) which is less-than the alpha value of 0.05, While null hypothesis 2 with p-value (0.267) is retained, it is therefore recommended that teachers should employed different teaching method that will convey all the category of student along, with giving due consideration to Student individual Learning style. Career counsellors should also take advantage of knowledge of the students learning styles to guide student on how to properly manage Aggressive behaviours and on the type of careers they are likely to succeed. Teachers should observe students of this category and reinforced accordingly.

Keywords: Learning style, Convergent, Divergent, Preferred style

Introduction

Education is one of the vital sectors that contribute towards the development of any society. It is the backbone of every nation, in which Economic, Political and Social wellbeing solely rely on. Learning styles have been shown to play an important role in the learning process. Individuals have different pattern of which they prefer to absorb, retain and process new information (Cassidy & Eachus, 2010). Learning Style is the characteristics dealing with cognitive, affective, social, and physiological behaviour that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment. Learning style of person is the preferred way through which he process information while learning, (Cassidy & Eachus, 2010). This include Convergent/Divergent learning styles, Field dependent Field/Field Independent, Reflective/ Impulsive etc.

Convergent and Divergent thinking is a term proposed by Guilford in 1956. Guilford's findings were considerably extended by Hudson in 1966, Guilford central interest was to design a more comprehensive model of human intellectual abilities. Using factor analysis, he developed his structure-of-intellect (SI) model (1956). Guilford conceived a three-dimensional cubic model, containing no less than 120 abilities.

He identified: (a) 4 content categories (figural, symbolic, semantic, behavioural), (b) 5 operation categories (cognition, memory, convergent and divergent production, evaluation) (c) 6 product categories (units, classes, relations, systems, transformations, configurations). Of all these abilities, most attention has been focused on the operation categories. This group was sequential: 'cognition' was used as 'knowledge', the most basic level; memory followed; convergent and divergent production together were more precise terms to define 'reasoning'; and the highest operation was evaluation of these 'operations', divergent and convergent production are the most widely known.

Convergent thinking: is a term proposed by Hudson in 1967 as the opposite of Divergent thinking. Convergent thinking is the finding a single best solution to a problem that we are trying to solve (Williams, 2013). Many tests that are used in schools, such as multiple-choice tests, spelling tests, math quizzes, and standardized tests, are measures of convergent thinking. ***Divergent thinking****:* is the process to create several unique solutions intending to solve a problem. The process of divergent thinking is spontaneous and free-flowing, unlike convergent thinking, which is systematic and logical. When using convergent thinking, we use logical steps in order to choose the single best solution. By using divergent thinking, instead of only choosing among appointed options, we search for new options. (Williams, 2013).

Aggression is the behaviour directed at harming someone who is trying to avoid such treatment The role of biological factors from instincts to the evolutionary perspective, Biological or genetic factors do play a role in determining aggression, although, it is not the entire cause, Human beings aggress against each other in different ways, and the frequency of aggressive actions varies across societies.

Dollard et al. (2016) proposed that aggression was due to frustration, which was described as an unpleasant emotion resulting from any interference with achieving a rewarding goal. Aggression can have adaptive benefits or negative effects. Aggressive behavior is an individual or collective social interaction that is a hostile behavior with the intention of inflicting damage or harm. Two broad categories of aggression are commonly distinguished. One includes affective (emotional) and hostile, reactive, or retaliatory aggression that is a response to provocation, and the other includes instrumental, goal-oriented or predatory, in which aggression is used as a means to achieve a goal. An example of hostile aggression would be a person who punches someone who insulted him or her. An instrumental form of aggression would be armed robbery. Research on violence from a range of disciplines lend some support to a distinction between affective and predatory aggression. However, some researchers question the usefulness of a hostile versus instrumental distinction in humans, despite its ubiquity in research, because most real-life cases involve mixed motives and interacting causes (Smith, 2020).

Aggression can take a variety of forms, which may be expressed physically, or communicated verbally or non-verbally: including anti-predator aggression, defensive aggression (fear-induced), predatory aggression, dominance aggression, inter-male aggression, resident-intruder aggression, maternal aggression, species-specific aggression, sex-related aggression, territorial aggression, isolation-induced aggression, irritable aggression, and brain-stimulation-induced aggression (hypothalamus). There are two subtypes of human aggression: (1) controlled-instrumental subtype (purposeful or goal-oriented); and (2) reactive-impulsive subtype (often elicits uncontrollable actions that are inappropriate or undesirable).

Statement of the Problem

Learning styles varies among individuals, each particular person has his own prepared learning styles through which he prepares to assimilate, transform and process information, Mismatch between the teaching and students preferred learning styles resulted to student's diversion from the actual educational objectives and subsequently leading to poor academic performance and increase in excessive aggression

while dealing with others. This issues is related to academic life in schools at all level of education. Most teachers do not have the knowledge of these suitable learning styles best for the students and how best learners learn. Teachers who have not understood the diversity of their learners in a typical classroom, and they keep on embracing the same traditional teaching styles in every context, will resulted to students with Negative thought in academic social context.

Teachers found it difficult to deal with this nature of students, due to their negative level of Aggression, which may have a significant impact on their personality, self-concept, socialization and conductivity of the learning atmosphere. Students of this nature may found it difficult to cope with their counter students of the same class thought under the same environmental condition. Likewise parents found their resources wastage if not given a clear look and hence, those parent put low effort as they are confident that schools or academic environment will do the miracle, which resulted of regarding schools as a rehabilitation center for their children. This study will look at possible implication that this variables has upon one another and how best to improve academic performance.

Objectives of the study

The research aimed to meet with the following Objectives.

1. To determine the Influence of Divergent/Convergent Learning style on Aggressive Behaviours among Secondary School Students.
2. To identify the Influence of Divergent/Convergent Learning styles on Academic Performance among Secondary School Students in Biology.

Research Hypotheses

The study is guided by the following null hypotheses:

1. There is no significant Influence of Convergent/Divergent Learning styles on Aggressive Behaviours among Secondary School Students.
2. There is no significant Influence of Divergent/Convergent Learning styles on Academic Performance among Secondary School Students in Biology.

Methodology

This study tends to use a Descriptive Survey Research Design. Because, in descriptive survey research design, data collection is carried out in a structured process, to describe the characteristics of a selected phenomenon and involves the collection of data without manipulation of variables (Convergent/Divergent Learning Styles, Aggressive Behaviour and Academic Performance). it is also an effective way of gathering data from different sources within a short period of time, (Kothari, 2010).

The population of this study will consists of 21 Senior Secondary Schools and 12,540 SS II Students, in Katsina Zonal Education Quality Assurance. The Zone comprises of three local governments namely: Katsina, Jibia, and Kaita Local Government Areas. The researcher restricted himself only to public schools because of their uniformity in standard and norms. This research work makes a study between Learning styles, Aggressive Behaviour and Academic Performance among Secondary School Students. This study uses both classes in data administration and analysis.

The sample size stands at 370 students of Katsina Zonal Education Quality Assuarance, and involve both male and female students, and the selection is guided by the provision of Krejcie and Morgan (1971). However, Student samples were selected using simple random sampling technique.This study adapted Hudson (1967) Test of common Object, The academic performance test contained 20 items multiple choice questions extracted from WAEC/NECO past Examination Questions. Aimed at assessing students' academic performance in Biology been compulsory subjects offered in secondary schools (Both Art and Sciences). The instruments was tested using population other than the targeted population, and internal

consistency co-efficient of 0.87 was obtained through Split-half. The collected data is analyzed using descriptive statistics and test of Linear Regression to test the stated Null hypotheses. The data collected is analyse with the aid of Statistical Package for Social Science (SPSS) version 20.0.at 0.05 level of significance.

Results

Data collected was processed with the aid of Statistical Package for Social Science (SPSS) version 20.0. The research hypotheses raised were tested using Regression Analysis, the two (2) research hypotheses raised in this research was tested and the data was subjected to statistical analysis at 0.05 level of significance as follows:

Ho1: There is no significant Influence of Convergent/Divergent Learning styles on Aggressive Behaviours among Secondary School Students.

Table 1. Result analyzing the Influence of Convergent/Divergent Learning styles on Aggressive Behaviours.

Variables	N	Mean	S.D	rvalue	P-value	Decision
Convergent Learning style and Aggressive Behaviour	119	18.301	6.845	2.551	0.002	Significant
Convergent Learning style and Aggressive Behaviour	171	10.447	3.410			
Total	**370**					

Convergent students has higher mean score of 18.301 and SD of 6.845, this shows that convergent learners are more Aggressive than their Convergent counterpart. Analysis shows that the t-value computed is 2.551 and the p-value is .002 observed at a degree of freedom of 368. Since the critical pvalue of .002 is less than the alpha value of 0.05, the hypothesis is rejected. This implies that, there is a significant Influence of Convergent/Divergent Learning styles on Aggressive Behaviours among Secondary School Students.

Variables	N	Mean	S.D	rvalue	Pvalue	Decision
Convergent Learning style and Academic Performance Biology	119	18.301	6.845	2.551	0.002	Significant
Divergent Learning style and Academic Performance Biology	171	10.447	3.410			
Total	**370**					

Abubakar, (2014), founded that most of the students were Convergent learners and they were at the concrete level of cognitive thinking; there is also a strong influence between students learning styles, the

level of cognitive thinking and aggression, More also, the result revealed significant Influence between the learning styles, their level of cognitive thinking and the Aggressive behaviour pattern.

Ho2: There is no significant Influence of Divergent/Convergent Learning styles on Academic Performance among Secondary School Students in Biology.

Table 2. Result analyzing the Influence of Divergent/Convergent Learning styles on Academic Performance among Secondary School Students in Biology.

Convergent students has higher mean score of 13.367 and SD of 6.214, this shows that convergent learners performed better than their divergent counterpart and this also clearly shows that Convergent students performed better in Biology. As observed from the Analysis, the t-value computed is 1.112 and the p-value is 0.267 observed at a degree of freedom of 368. Since the critical p-value of 0.267 is greater than the alpha value of 0.05, the hypothesis is retained and implies no significant Influence of Divergent/Convergent Learning styles on Academic Performance among Secondary School Students in Biology.

Hypothesis two clearly show no significant Influence in academic performance between Convergent and Divergent Students' in Biology. This finding is supported by Field and Poole (2015) who reported that, while convergent bias was associated with more high level students' passes in the first year study, there is significant difference in the relative success of convergent students in the second year in relation to their Academic performance in Biology. However, they found that there is no Influence on student's choice of Department (arts or science), learning styles and Academic performance.

Conclusion

Teachers play an integral role in the educational system and development of economic and self-reliant Society. When they are provided with the opportunity to commit to professional development programs that make strong connections with theory, research and practice they are better prepared to influence the knowledge and skills of their students in a positive manner.

Recommendations On the basis of the findings and conclusion of this study, the following recommendations were offered.

1. Teachers should employed different teaching method that will convey all the category of student along, with giving due consideration to Student individual Learning style.

2. Career counsellors should take advantage of knowledge of the students learning styles to guide student on how to properly manage Aggressive behaviours and on the type of careers they are likely to succeed. Teachers should observe students of this category and reinforced accordingly.

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