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LEARNING STYLE PREFERENCES AS DETERMINANTS OF ACADEMIC ACHIEVEMENT AMONG PUBLIC JUNIOR HIGH SCHOOL PUPILS IN THE EFFUTU MUNICIPALITY

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ABSTRACT: *The study sought to investigate the learning style preferences and how it affects the academic achievement among students in public junior high schools in the Effutu Municipality in the Central Region of Ghana. The study was grounded in Fleming's (1995) VAK learning style theory. The descriptive survey design was used and was aligned with positivist paradigm where 532 public junior high school pupils were chosen through the stratified random sampling technique. A reliability coefficient of not less than 0.70 was realized for all the various constructs. The data gathered through questionnaire were analysed using both descriptive (mean, standard deviation) and inferential (Pearson Moment Correlation) statistics. The study revealed that the visual learning style was most dominantly preferred (M = 3.88, SD = 0.62), followed by kinesthetic (M = 3.67, SD = 0.72), and auditory (M = 3.58, SD = 0.66) learning styles. Besides, it was established that generally there was a strong and statistically significant positive relationship between learning styles preferences of pupils' and academic achievement (r = 0.861, p = 0.000, 2-tailed). Therefore, it was recommended that the Effutu Municipal Education Directorate should collaborate with school guidance and counseling coordinators to plan and execute academic programmes such as workshops and seminars to expose teachers to adopt and practice instructional pedagogies to meet the varied learning style preferences of pupils so as to boost their academic achievement.*

KEYWORDS: learning style preferences, academic achievement, junior high school pupils, instructional pedagogies

INTRODUCTION

Extant researches have consistently established that an effective learning style adopted by students is one of the major strategies to ensure good academic achievement. Ghanbari and Chermahini (2013) averred that learning style is generally used to explain an individual's natural or habitual pattern of acquiring and processing information in learning situations. Smith and Dalton (2005) also assert that learning style is a distinctive and habitual manner through which knowledge, skills or attitudes are acquired based on study or experience. Studies have disclosed that once students realize their learning style and know how to make things fit their needs; they become more proficient learners; (Sims & Sims, 2006; Sze, 2009). According to Liang (2012), when students are aware of their best learning style it helps to heighten acquisition of knowledge within a specific time frame. This suggests that learning style is directly linked to student learning outcomes and

that effective learning style boost academic achievement while ineffective styles reduces achievement. Other studies have demonstrated that learning styles do not only affect academic achievement, but also they influence students' behaviour and attitude to learning (Dunn, et al., 2009). Advocates for the use of learning styles in education such as Ghanbari and Chermahini (2013) therefore appeal that teachers should assess the learning styles of their students and adapt their classroom methods to best fit each student's learning needs. It could be assumed that appropriate learning styles spark and sustain students' enthusiasm for learning and spur them on to learn even in the face of challenges.

Statement of the Problem

Learning is indispensable ingredient of human life (Esia-Donkoh, Eshun, & Acquaye 2015). No one can survive in this world without learning. The Ministry of Education (2013) has observed that Ghana has witnessed increased poor teacher and student achievements in recent times. In the Effutu Municipality, academic achievement of students in Basic Education Certificate Examination (BECE) has not been encouraging as presented in Table 1.1.

Table 1.1: Academic Achievement of Students in Basic Education Certificate Examination (2013-2016)

Year	Pass Rate (%)	Failure Rate (%)
2013	42.5	57.5
2014	44.0	56.0
2015	44.8	55.2
2016	54.7	45.3

Source: *Effutu Municipal Examination Unit of Ghana Education Service (2013-2016)*

It could be observed from the data in Table 1.1 that in 2013, 42.5% passed whereas 57.5% failed. The pass rate increased in 2014 to 44% while the failure rate also decreased to 56%. Similarly, in 2015 the pass rate increased from 44% in 2014 to 44.8% in 2015. Achievement in 2016 also increased as the pass rate increased from 44.8% to 54.7% with the failure rate decreasing from 55.2% to 45.3%.The information has revealed the mean achievement pass from 2013 to 2016 is 46.5% which indicated that at least about 53.5% of the students failed each year. Researchers have investigated the causes of poor academic achievement of students, and learning style emerged as a contributing factor (Deniz, 2013: Kazu, 2009). Deductively, the problem of poor academic achievement mostly results from the learning style (Gokalp, 2013, Nzesei, 2015 & Barman, Aziz, Yusoff, 2014, Afful-Broni & Mawusi 2010). A number of previous studies have investigated the relationship between students' learning styles and academic achievement. The present study focused on the aspect of the learning style preferences of pupils in public Junior High Schools in the Effutu Municipality of Ghana with the end goal of contributing to the existing body of knowledge about distinct learning style preferences and how they affect academic achievement. This study hypothesizes that the poor academic achievement in the Effutu Municipality could be attributed to the poor learning styles practiced by the students. However, research into the learning style and its influence on academic achievement in the study area is rare. This study was therefore conducted to fill this gap.

Purpose of the Study

The purpose of the study was to investigate the learning style preferences and how it affects the academic achievement among students in public Junior High Schools in the Effutu Municipality in the Central Region of Ghana.

Research Objectives

The objectives of the study were to:

1. determine the nature of learning style preferences of pupils in public Junior High School in the Effutu Municipality in the Central Region, Ghana.
2. investigate how learning style preferences of pupils in public Junior High School in the Effutu Municipality in the Central Region, Ghana relate to their academic achievement

Research Questions

The study sought to answer the following research questions:

1. What is the perception of pupils on the nature of their learning style preferences in public Junior High Schools in the Effutu Municipality in the Central Region, Ghana?
2. What is the relationship between learning styles and academic achievement among public Junior High School pupils in the Effutu Municipality in the Central Region, Ghana?

Significance of the Study

It is hoped that the findings of the study would be beneficial to the students, teachers, and policy makers in education. Firstly, it is anticipated that the study would provide evidence on the nature of learning styles among the students, and offer appropriate recommendations to rehabilitate students who might be at risk of poor learning styles so as to improve their academic achievement. Secondly, it is hoped that the findings of the study would provide information to teachers, school guidance coordinators, and parents on the effect of students' learning style on their academic achievement so that proper motivation and guidance services would be offered to the students. Thirdly, it is hoped that the findings of the study would contribute to the body of knowledge on learning style and how it affects their academic achievement since there is paucity of empirical studies on these issues in public Junior High Schools in the Effutu Municipality. Furthermore, the findings of the study would serve as a guide to school administrators, teachers, and school guidance and counseling coordinators to design evidence-based strategies so as to improve the learning styles of students. Finally, the outcome of the study would serve as a bench-mark to government, policy makers, the media, and researchers for future researches.

Delimitation of the Study

This study includes students' learning style preferences on the academic achievement in public Junior High Schools in the Effutu Municipality in 2017/2018 academic year. Therefore, private basic schools are outside the scope of the study.

Limitation of the Study

This study was conducted in the Effutu Municipality in the Central Region. Therefore, the findings may not be generalized to the entire Junior High Schools in the Central Region. Besides, the study

learning styles discussed in the study were based on the respondents' perception in the 2017/2018 academic year. Therefore, the findings might not be generalized to all times since the conditions during this study may change.

RELATED LITERATURE REVIEW

The review delves into theoretical and empirical review of the study.

Fleming's VAK Learning Style

One of the most common and widely used theories in learning style field is Neil D. Flemings VARK model (also VAK) which expanded upon earlier neuro-linguistic programming (VARK) models: visual learners, auditory learners, reading-writing preference learners and kinesthetic or tactile learners. According to Fleming, as a teacher, ones best option is to use a variety of teaching techniques to give all students the best chance to succeed. Further, most people possess a dominant or preferred learning style, however some people have a mixed and evenly balanced blend of the three types: visual, auditory and kinesthetic (Fleming, 1995). Fleming claimed that visual learners have a preference for seeing (think in pictures; visual aids that represent ideas using methods other than words, such as graphs, charts, diagrams, symbols, etc.). Auditory learners best learn through listening (lectures, discussions, tapes, etc.). Tactile/kinesthetic learners prefer to learn via experience moving, touching, and doing (active exploration of the world; science projects; experiments, etc.). Its use in instruction allows teachers to prepare classes that address each of these areas, especially in languages. It is on this learning style (VAK Learning Style) that the present study is anchored on (Fleming, 1995).

Learning Styles

According to Brown, Zogni, Williams and Sim (2009), one of the variables within the framework of learning that has received considerable research is the learning styles of students. In their study which sought to compare students' learning styles preferences in public and private senior high schools in Lagos Metropolis of Nigeria, Alade and Ogbo (2014) discovered that visual learning style was dominantly used more than auditory and kinesthetic learning styles. This finding suggests that different types of learning styles exist amongst students in a school at the same time. Winn and Grantham (2005) realize from their study that everyone has different learning style preferences, and as such, students learn in diverse ways.

Academic Achievement

Academic achievement of students consists of scores obtained from teacher-made test, first term examination, mid-term test, and so on (Steve, 2000). Academic achievement has always been influenced by the learner's previous education achievement (Staffolani & Bratti, 2002), parents' income and social status (Considine & Zappala, 2002), students social and emotional status or wellbeing (Erdogan et.al.2008), the school environment (Sparkles, 1999; Sentamu, 2003) learner's attitude (Erdogan et. al., 2008), among other factors.

Relationship between Learning Style and Academic Achievement

Researchers have investigated the link between learning styles and students academic achievement in different contexts. Previous studies (Dunn, 2000; Sutliff & Baldwin, 2001; Alade & Ogbo,

2014) have sounded the strong influence of students learning styles on their achievement. It is inferred from this finding that learning styles enhances and eventually leads to superior academic attainment of students. Conversely, learning style preferences of students does not have any link to the academic achievement of students. Previous studies by (Fatokun & Eniayeju, 2014a & Norman, 2008) have gathered empirical proof that learners' academic achievement is not greatly dependent on their learning style preference. Therefore, the literature on previous researches has demonstrated inconsistent results on the relationship between learning style preferences and students' academic achievement. This study seeks to find out the relationship between students learning style preferences and students' academic achievement in the context of the study.

Conceptual Framework

The conceptual framework of the study is presented in Figure 1.There are three sets of variables in this study. Learning styles is the independent variables while students' academic achievement is the dependent variable. The learning styles included auditory, visual, kinesthetic learning styles. The dependent variable was the academic achievement of the students that comprised the four compulsory subjects namely, English Language, Mathematics, Integrated Science, and Social Studies.

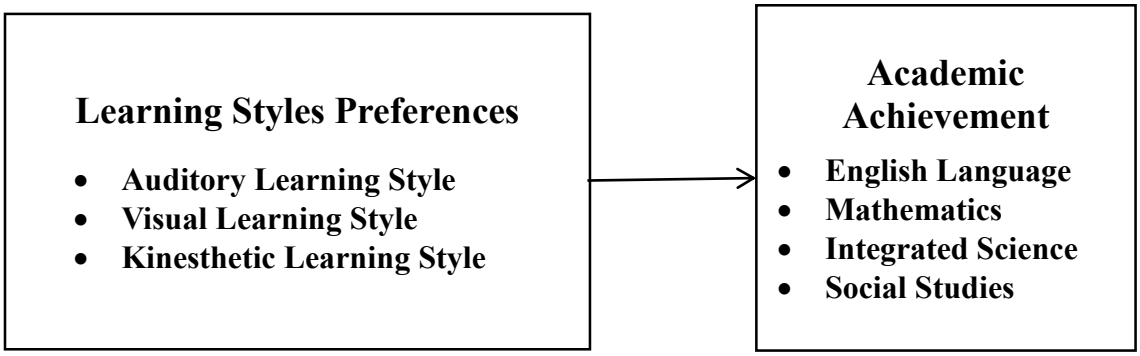

Figure 1 Conceptual Framework
Source: Designed by Researchers, 2019

METHODOLOGY

Philosophical Underpinning of the Study

This study is grounded in the positivism philosophy of how knowledge is created. Positivism is an epistemological perspective that is based on quantitative data and observation with the goal of being independent from subjective opinions (Bryman & Bell, 2011). These authors further added that positivism is the natural science procedure for collecting data about an observable reality and search for regularities and relationships to create generalizations.

Research Design

A descriptive survey design was used to conduct the study. This design focuses on and describes a phenomenon (McMillan & Schumacher, 2010). The researchers chose the descriptive survey design because the aim of the study was to describe the nature of learning style and the effect of

these on the academic achievement of students in the public Basic Schools in the Effutu Municipality.

Population of the Study

A population is the total collection of elements about which inferences are made, and refers to all possible cases which are of interest for a study (Lavrakas, 2008). In this study, the population comprised all junior high school students in basic schools in the Effutu Municipality. The target population was all pupils in public Junior High School in the Effutu Municipality. This was made up of 1741 girls and 1805 boys, totaling 3546 Public Junior High School pupils.

Sample and Sampling Techniques

A sample of a study refers to any portion of a population selected for the study and on whom information needed for the study is obtained (Akinade & Owolabi, 2009). In this study, 532 public Junior High School pupils were selected to constitute the sample for the study. The size of the sample was deemed representative of the target population based on the suggestion by Gay and Airasian (2003) that at least 10-20% sample is adequate for a descriptive study. Therefore, the sample size of 532 was 15% of the target population of 3546 students.

Sampling means a process of selecting a given number of subjects from a defined population as representative of that population such that any statements made about the sample should also be true of the population (Orodho, 2009). The study employed the stratified sampling technique to select the respondents. Scholars like Nwankwo (2013) support the use of the stratified random sampling to ensure a fair representation of every stratum (subgroup) in the population.

In carrying out the stratified random sampling, the first step involved the sampling frame which is the actual list of individuals included in the population (Nesbary, 2000). The population was first categorized into gender, and the selection of the students from each of the sexes was done proportionately to its composition in the population. The proportion of each gender in the population of the school was calculated to determine the number of male and female pupils to be selected in the Municipality. For instance, the number of boys in the total population was 1805 which represented about 51% of the total population and 1741 girls of the total population represented 49%. This means that these proportions by way of sex should reflect in the sample. Therefore 51% of 532 represented 271 boys and 49% of 532 represented 261 girls. Thus the sample of the population was 532 pupils made up of 271 boys and 261 girls.

Instrumentation

Data collection instruments are tools used to collect information in research or the methods employed to collect research data (Zikmund, 2003). The questionnaire was used to generate data for the study. Denzin and Lincoln (2012) argued that the questionnaire is probably the single most common research tool that is relatively well understood and has the advantages of simplicity, versatility and low cost. The questionnaire was made up of five sections. Section One gathered demographic information of the respondents such as gender, age and form. Section Two collected data on learning style preference of the students in the schools based on the Fleming's (1995) VAK

learning style questionnaire. Section Three collected data on the students' academic achievement in the four core subjects (English, Mathematics, Integrated Science and Social Studies). The questionnaire asked the participants to rate the statements which were measured on a 5-point Likert-type scale. Response options included: (SA) = 5, Agree (A) = 4, Neutral (N) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. The participants chose from the five options to represent their opinion on their learning styles. The respondents were required to choose only one option to reflect their view.

Pre-testing of Instruments

Pre-testing of instruments refers to "A preliminary administering of instruments carried out before the full research to test out data collection instruments and other procedures" (Gerrish & Lacey, 2006, p. 538). The pre-testing was done in the Gomoa West District. The researcher chose the district because it was deemed to have exhibited similar characteristics as the Effutu Municipality. A total sample of Twenty–five *(n= 25)* students were conveniently sampled from a school in the Gomoa West District for the pre-testing. The researcher used the sampling technique after taking into consideration the resources at her disposal.

Validity

Validity is the extent to which a measuring instrument (like a questionnaire) really measures the characteristic it intends to measure (Leedy & Ormrod, 2005). Therefore, content validity of the instrument was granted by supervisors and other lecturers who are experts and have knowledge in the issues of the study.

Reliability

Reliability refers to the consistency of results if a study is repeated, and is concerned with stability, internal reliability and inter-observer consistency (Bryman & Bell, 2012). In this study, reliability of the questionnaire was treated as internal consistency of the questionnaire items where Cronbach alpha was computed to determine the reliability based on data collected in a pilot test. The reliability of the instrument for each variable exceeded 0.7 which was in line with McMillan and Schumacher's (2010) recommendation that reliability needs to be 0.7 or higher. Based on the finding of the results, it could be concluded that the instruments were reliable.

Data Collection Procedure

Data collection as the gathering of information needed to address a research problem (Polit & Beck, 2010). Before the fieldwork, the researchers obtained an introductory letter from the Department of Basic Education to facilitate the process of data collection. The introductory letter was used to seek permission from the Effutu Education Directorate. Then, the researchers visited the schools and introduced themselves to the head teachers, and sought permission from them to carry out the study in their schools. Five hundred and thirty-two (532) questionnaires were administered to the Junior High School students, but four hundred and ninety-six (496) were retrieved, representing a response rate of 93%. The researchers could not attain 100% response rate because some of the respondents did not return the questionnaire after several attempts were

made to retrieve them. However, this response rate was deemed appropriate based on the recommendation of Babbie (2001) that a response rate of 50% is enough in a survey.

Data Analysis Procedure

Descriptive statistics was used to analyse the data. Descriptive statistics enabled the researcher to reduce, summarize, and describe quantitative data obtained from empirical evidence (Polit & Beck, 2010). The descriptive statistics such as mean, standard deviation were used to analyse the data that were organised in tables. Inferential statistics such as the Pearson Product Moment correlation were used to make inferences from the data. In order to determine the relationship between the study variables, Pearson Product Moment correlation was employed because it is suitable for determining the bivariate correlation between two variables (Bryman, 2012). Multiple regression was employed to determine the extent to which learning style contributed to academic achievement due to its suitability for investigating the extent to which one or more independent variables affect one or more dependent variables (Cohen et al., 2011). Therefore, learning styles served as the independent variable and academic achievement was the dependent variable in the regression equation. Both the forced entry method and stepwise regression were used.

FINDINGS AND DISCUSSIONS

Demographic Characteristics of Respondents

The demographic characteristics of the respondents such as form/class of students, sex, age, and parental level of education were examined, and the results are presented in Table 4.1.

It could be observed from the information in Table 4.1 that more males (n = 260, 52.4%) than females (n = 237, 47.6%) participated in the study. The information disclosed that more JHS 1 students (n = 199, 40.0%) than JHS 2 (n = 172, 34.6%) and JHS 3 (n = 126, 25.4%) were involved in the study while majority of the students were 12-15 years (n = 417, 83.9%) than those who were 16-19 (n = 80, 16.1%) years.

Table 4.1: Demographic Characteristics of Respondents

Variables	Variables	Frequency	Percentage
Sex of Students	Male	260	52.4
	Female	237	47.6
Form of Students	JHS 1	199	40.0
	JHS 2	172	34.6
	JHS 3	126	25.4
Age of Students	12-15	417	83.9
	16-19	80	16.1
Parental Education Level	Basic	69	13.9
	Secondary	266	53.5
	Tertiary	79	15.9
	No Education	83	16.7

Source: Field Data, 2019

The composition of the respondents based on their parental level of education has shown that the proportion of those who had Secondary School Education (n = 266, 53.5%) were more than those who received No Education (n = 83, 16.7%), Tertiary Education (n = 79, 5.9%) and Basic

Education (n = 69, 13.9%) levers respectively. The demographic data of the respondents were vital as they confirmed that data were collected from a sample with varied backgrounds which suggested that the data were rich and representative of the population.

Data Presentation and Analyses of Research Questions

Research Question 1 - What is the perception of students on their learning style preferences in public Junior High Schools in the Effutu Municipality?

This research question sought to examine the kind of learning style preferences adopted by students in junior high schools in the Effutu Municipality. The learning styles were conceptualized as auditory, visual, and kinesthetic learning styles, and the results are presented in Table 4.2.

Table 4.2 Summary of Students' Learning Style Preferences

Learning Styles	N	Minimum	Maximum	Mean	Std. Deviation
Visual Learning Style	497	2	5	3.88	0.62
Kinesthetic Learning Style	497	1	5	3.67	0.72
Auditory Learning Style	497	1	5	3.58	0.66
Overall Learning Style	497	2	5	3.71	0.47

Source: Field Data, 2019

The results in Table 4.2 revealed that visual learning style was more dominant (M = 3.88, SD = 0.62) than kinesthetic learning style (M = 3.67, SD = 0.72), and auditory learning style (M = 3.58, SD=0.66). The overall learning styles yielded a mean of 3.71 (SD = 0.47). Based on the 5-point Likert scale used for the data where the mean is 3.0, it could be noticed that all the components of learning styles as well as the overall were above the mean, and this implies that all the facets of learning styles and the overall learning style were commonly adopted by the students in public Junior High Schools in the Effutu Municipality.

The results indicated that the Junior High School Students adopted and practiced an amalgam of learning styles to their studies in their schools. Therefore, the students were not aligned to the practice of single learning style, but rather adopted a mixture of learning styles as they reckoned suitable. The findings from the first research question as shown in Table 4.2 are based on the collective perception of all the public Junior High School students in the Effutu Municipality that participated in the study.

Research Question 2 - What is the relationship between learning styles and academic achievement among public Junior High School in the Effutu Municipality?

The second research question examined the relationship between learning styles and students' academic achievement, and the interpretation of the strength of correlation was based on the recommendation of Devore and Peck (1993) that coefficients less than 0.5 represent a weak relationship, coefficients greater than 0.5 but less than 0.8 represent a moderate relationship, and coefficients greater than 0.8 represent a strong relationship. The Pearson Product Moment correlation was used to test the relationship between the variables, and the results are presented in Table 4.3

Table 4.3: Pearson Correlation Matrix for Learning Styles and Academic Achievement of Students

		1	2	3	4	5	6	7	8	9
	Mean	3.58	3.88	3.67	3.71	2.63	3.19	2.82	2.82	2.87
	Std. Dev.	0.66	0.62	0.72	0.47	1.19	1.50	1.26	1.43	1.14
1	Auditory	1								
2	Visual	0.204**	1							
		(0.000)								
3	Kinesthetic	0.289*	0.255*	1						
		(0.000)	(0.000)							
4	Overall Learning Styles	0.704*	0.663*	0.752*	1					
		(0.000)	(0.000)	(0.000)						
5	English	0.084	0.091*	0.075	-0.042	1				
		(0.060)	(0.043)	(0.096)	(0.354)					
6	Mathematics	0.191*	0.020	0.045	0.058	0.628*	1			
		(0.000)	(0.657)	(0.319)	(0.197)	(0.000)				
7	Science	0.092*	0.151*	0.002	0.110*	0.726*	0.669*	1		
		(0.041)	(0.001)	(0.971)	(0.014)	(0.000)	(0.000)			
8	Social Studies	0.011	0.229*	0.063	0.137*	0.607*	0.519*	0.596*	1	
		(0.813)	(0.000)	(0.158)	(0.002)	(0.000)	(0.000)	(0.000)		
9	Overall Academic	0.114*	0.131*	0.014	0.104*	0.861*	0.843*	0.875*	0.810*	1
	Achievement	(0.011)	(0.003)	(0.758)	(0.021)	(0.000)	(0.000)	(0.000)	(0.000)	

N=496 *Correlation is significant at p< 0.05 (2-tailed)
Note: P-values are in parentheses
Source: Field Data, 2019

The Pearson correlation results in Table 4.13 revealed a weak but statistically significant positive relationship between auditory learning style and overall academic achievement (r=0.114, p=0.011, 2-tailed), and weak and statistically significant positive relationship was observed between visual learning style and overall academic achievement (r=0.131, p=0.003, 2-tailed). The information also established there was no statistically significant positive relationship between kinesthetic learning style and overall academic achievement (r=0.014, p=0.758, 2-tailed) whereas overall learning style made a strong and statistically significant positive association with overall academic achievement (r=0.104, p=0.021, 2-tailed). Based on these results, it was established that the learning styles of students are crucial in ensuring better and improved academic achievement in the Effutu Municipality and all the learning styles are important in enhancing academic achievement in the Effutu Municipality.

DISCUSSION OF FINDINGS

The results on research question one disclosed that multiple learning styles were adopted by the students in the schools. Indeed, all the learning style preferences outlined in this study such as auditory, visual, kinesthetic as well as their combinations were used by the students in their learning in the schools. However, the results revealed that visual learning style was most dominant among the students while the auditory learning style was least dominant. The finding of the study was consistent with the findings of Alade and Ogbo (2014) which discovered in their study that

visual learning style was dominantly used more than auditory and kinesthetic learning styles. Furthermore, the outcome of this study concurs with Winn and Grantham (2005) findings which revealed that everyone has different learning style preferences, and some students favour a singular (for example, visual) than other learning styles. This means that the students prefer to see materials to enhance their understanding and by this they prefer to use visual aids such as graphs and diagrams to help them put the content of what is to be learnt into perspective. Contrarily, Adeniji (2015) discovered that students prefer kinesthetic learning style more than auditory and visual learning styles. Implicitly, it could be said that these students like to read, write and do physical activities while learning than hearing and seeing.

The analyses revealed that generally there was a strong and statistically significant positive relationship between learning styles preferences of students' academic achievement (r=0.861, p=0.000, 2-tailed). For the learning styles, the results showed a weak and statistically significant positive relationship between auditory learning style and overall academic achievement (r=0.114, p=0.011, 2-tailed), and weak and statistically significant positive relationship was observed between visual learning style and overall academic achievement (r=0.131, p=0.003, 2-tailed). However, the information established no and statistically significant positive relationship between kinesthetic learning style and overall academic achievement (r=0.014, p=0.758, 2-tailed). These results have disclosed that the learning style preference of students is crucial in their academic achievement, and they confirm the outcome of previous studies (Dunn, 2000; Sutliff & Baldwin, 2001; Alade & Ogbo, 2014) where they discovered that students learning style preferences had a positive relationship with academic achievement. However, it departs from (Fatokun & Eniayeju, 2014a & Norman, 2008) finding that there was no significant relationship between students learning style and students' academic achievement in schools.

Research Implications

The study extends knowledge in the field of learning styles to the Effutu Municipality context, as most of investigations have been carried out in the western culture. The study revealed that though public Junior High School pupils in the Effutu Municipality practiced a mixture of learning styles, it was discovered that visual learning style was dominant than the kinesthetic and auditory learning styles implying that individuals differ in regard to what type of instruction is most effective for them. The current study has demonstrated that there are several different ways of learning which are equally important to the realization of academic achievement. This suggests that all students ought to be given extensive opportunities to learn through their preferred style. However, this appears to present a challenge to teachers in their effort at optimizing instructions which suggests diagnosing individual learning styles and teaching instructions. This suggests the use of a variety of teaching techniques to give all pupils the best chance to succeed. This is consistent with Fleming's VAK learning style. The research findings suggest that teachers need to prepare classes that address each of the pupils' learning style which can also assist pupils to identify their preferred learning style to boost their academic achievement.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Generally, the study has highlighted the link between learning styles on the pupils' academic achievement in the Effutu Municipality of Ghana. Indeed, the findings of the study indicated that there was a positive link and statistically significant effect between learning style and academic achievement of students. Instructively, it is obvious that lack of consideration of the learning style preferences of students by teachers could be the cause of dismal academic achievement in the Municipality which is matter of concern to all education stakeholders. Therefore, education stakeholders are expected to direct their resources and efforts towards improving the learning styles preference of students if they desire to enhance academic achievement among the students.

Recommendations

Based on the key findings of the study, it is recommended that:

i. The Municipal Education Service should collaborate with school guidance and counseling coordinators to plan and execute academic programmes such as workshops and seminars to expose teachers to adopt and practice instructional pedagogies to meet the varied learning style preferences of students so as to boost their academic achievement.

ii. The study had proven that students learning style preferences are essential in realizing improved academic achievement. Hence, it is recommended that the Effutu Education Directorate should organize refresher courses to the teachers to equip them with the relevant knowledge and skills to effectively identify students learning style preferences so as to enhance academic achievement in the Effutu Municipality.

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