STUDY HABITS AND ACADEMIC PERFORMANCE AMONG PUBLIC JUNIOR HIGH SCHOOL STUDENTS IN THE EKUMFI DISTRICT: INVESTIGATING THE CONTROLLING EFFECT OF LEARNING STYLES

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Abstract:
Despite the increased prominence of research on the influence of study habits and learning styles on students' academic performance in recent years, there are still controversies and debates in literature on whether learning style strengthens the effect of study habits on academic performance. Therefore, this study utilized Bakare (1977) study habits theory and the VAK learning styles theory postulated by Fernald and Keller (1920) as theoretical lenses to examine the influence of study habits on academic performance among students in public Junior High Schools in the Ekumfi District, while controlling for the possible effect of learning styles. A cross-sectional descriptive survey design was used to collect quantitative data through a questionnaire and checklist from 475 students using proportionate stratified sampling techniques. After meeting validity and reliability requirements, inferential statistical tools such as Pearson Product Moment Correlation and hierarchical multiple regression were used to analyze the data. The study revealed that overall, study habits attained a strong and statistically significant positive relationship with students' overall academic performance. Besides, the study revealed that learning styles exclusively contributed significantly to academic performance. It was further revealed that learning styles did not impede the effect of study habits on academic performance. Instead, learning styles reinforced the link between study habits and academic performance among the students. Specifically, it was established that auditory learning style, visual learning style, kinesthetic learning style, reading and note-taking and time management made a unique and significant contribution to academic performance, however, the individual contributions of examination, homework and assignments, and concentration did not reach statistical significance. Therefore, it is recommended that strategies aimed at the improvement of study habits should run

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concurrently with approaches to enhancing the learning styles of the students for better academic performance.

Keywords: study habits, learning styles, academic performance, junior high school

1. Introduction

In recent years, there exists some unanimity among scholars and practitioners that education is the pillar around which a nation's socio-economic progress revolves. Accordingly, the provision of quality education is a priority that every country aspires to include in the national goals of education. Scholars like Cabrera and Torres (2021) argued that the purpose of education is to equip the citizenry with values, skills and knowledge to reshape their society and eliminate inequality. Quality education, therefore, equips beneficiaries to adapt to the changing needs of the country as the world changes and spearhead the development of human resources and the country's economy. From this perspective, it could be deduced that education helps an individual to develop his/her capabilities, attitudes and behaviour that are acceptable to society, meet manpower needs, and create an egalitarian society.

In the quest to provide quality education, Rusdin (2018) observed that in the past three decades, there have been remarkable reforms in educational systems worldwide. In Ghana, the latest of these reforms came to light when the government through the Ministry of Education (MoE, 2019), and the National Council for Curriculum and Assessment (NaCCA) in 2019, introduced a curriculum reform at the basic education level where the Standard-Based Curriculum (SBC) was implemented (Apau, 2021; Addai-Mununkum, 2020; Kpedator, 2019). These scholars further intimated that the Standards-Based Curriculum anticipates preparing students with 21st Century skills such as creativity, digital literacy, reading, writing, arithmetic, teamwork, and leadership skills which are competencies needed by students to navigate through the ever-changing world. These reforms besides, resulting in increased access to basic education, especially in Ghana (Wolf & Peele, 2019; Keaveney, et. al., 2018), also demonstrate Ghana's commitment to achieving the provision of quality education to students at the basic education level as enshrined in the Sustainable Development Goals (SDG) goal four (4), which seeks to ensure access to equitable quality education for all children of school-going age (United Nations, 2021).

Accordingly, both developed and developing countries expend a substantial portion of their resources to quality education delivery. For instance, Ghana made a budgetary allocation of 9.26 billion cedis to education in 2018, thereby increasing its allocation by 11% over the previous year to the education sector (Republic of Ghana, 2018). In 2020, the Parliament of Ghana approved 13.3 billion cedis for the education sector to ensure the provision of education in the country (Republic of Ghana, 2020). These investments have undoubtedly resulted in an increase in enrollment (Educational Sector Performance Report, 2019). Nevertheless, scholars like Fullan (2016) argued that it is not advance in enrolment per se that matters, but rather the quality of education and

learning outcomes that is more strongly correlated with economic development. Deductively, an increase in enrollment is necessary but an insufficient predictor of educational success. Hence, it is expected that the investments in education would improve the quality of education in general, and particularly, the learning outcomes of students.

Scholars have demonstrated that the academic performance of students is a prime parameter for assessing education quality. Corroborating this view, Mirghani (2020) contends that the academic achievement of students is a major indicator of quality education. Likewise, educationists like Cabrera and Torres (2021) postulated that academic achievement is a significant indicator of quality education and a successful future. Moreover, students' academic achievement has far-reaching repercussions for students as well as nations because, the social and economic development of the country is directly linked with student academic performance. In essence, poor academic performance of students implies that the quality of education offered to the citizenry is inferior, hence, unable to promote the required level of development that is desired. Besides, Wang (2021) opines that academic performance of students constitutes the core of the educational process, and that without it, all efforts meant to induce innovations in society would be a mirage. It is inferred from the preceding assertions that good academic performance of students matters in a country's quest for realizing its educational goals.

Meanwhile, reports have shown that academic performance of students across the globe is worrying. Scholars like Kirori and Dickinson's (2020) observed that the challenge of students' under-achievement is not new as it has been a perturbing issue traceable to the early 1980s. In Nigeria, for instance, Olawoyin and Isuku (2019) discovered poor academic performance of students in examinations conducted by the West African Examination Council. Similar developments pertain in Ghana as research carried out in the Ghanaian basic schools (Baafi, 2020; Keaveney et al., 2018; Donkor & Banki, 2017; Tamanja, 2016) corroborated the claim that learning outcomes are low at the elementary level, and these are indicative of low quality education in the country. These scholars noted that there has been a remarkable drop in the academic performance of public basic school students in Ghana over the last decade. These reports further suggest that the poor academic performance of students is an affront to the realization of quality education as well as the attainment of national goals and aspirations. Therefore, the alarming trend in the academic performance of students requires studies to unearth the factors that impede good performance, and evolve strategies to resolve them.

Generally, literature has established that study habits affect students' academic performance and the attainment of educational goals (Lone, 2021; Pathak, 2021). Gupta and Suman (2017) posited that good study habits help a student in critical reflection in skills outcomes such as selecting, analyzing, critiquing, and synthesizing. Understandably, good study habits assist students to apply their thought processes to identify relevant bodies of knowledge and evaluation of same. Conversely, poor study habits impede students' capacity to engage in constructive intellectual exercise. Yap (2019) illustrated that study habits are learning tendencies that enable students to work

privately. Beyond the classroom, students are expected to engage in personal studies, revise previous lessons independently and sometimes with their teachers as well as do assignments. The execution of these tasks demands good study habits. Azikiwe (1998) postulated that good study habits are valuable assets to students because they (habits) help students achieve mastery in areas of specialization and, as a result, excellent performance, whereas the opposite constitutes constraints to learning and performance, leading to failure. The results of the above studies confirm that students' academic performance is influenced by their study habits. Understandably, appropriate study habits lead to good academic attainment and vice versa.

Even though the original study habits by Bakare (1977) consisted of many components, five components were included in this study. These include homework/ assignments, time allocation, reading and note taking, concentration, and time management. These elements were considered in the study because they relate well to the Ghanaian education context, and the results would have implications for effective learning. Researchers have examined the impact of the individual components of Bakare's (1977) study habit inventory. On time allocation, Strauss and Volkwein (2002) found that learning for more hours was positively related to academic performance. On homework/assignment, Minotti (2005) and Mushtag and Khan (2012) discovered that students who showed positive attitude towards homework attained higher academic performance than those who showed lukewarm attitude to homework. On note-taking, studies like one conducted by Kiewra, Benton and Lewis (2007) have confirmed that students who take notes score higher on tests than those who do not take notes. Therefore, students are expected to take-notes as part of their study habits which will eventually result in enhanced academic performance. Yet, it appears scholars are skeptical on the effect of note-taking on students' learning outcomes nowadays. This concern is supported by Muraina (2013) when he argued that the effectiveness of note-taking in reinforcing learning of student is questionable due to advancement in commercial note taking services.

Many researchers are convinced that concentration plays a crucial role in the study habits of students which lead to improved academic performance. Accordingly, Oladele (2000) advocated that students need to concentrate on their studies by choosing a place of study which can stimulate them to study devoid of external distractions. The argument from Oladele (2000) presupposed that when students concentrate on their studies, they are able to apply themselves favourably to the learning assignment and reap the benefits through good academic performance. However, conflicting results exist on the effects of concentration on academic performance. In a study by Oluwatimilehin and Owoyele (2012), it was revealed that concentration does not predict academic performance of students. Furthermore, time management practices have an impact on the academic attainment of students as proven in empirical studies done by previous researchers. For instance, Agarwal (2008) and Mushtag and Khan (2012) observed that students need to be self-disciplined in their time to improve their performance. The findings of these researchers suggest that good study habits engender good academic performance while

poor study habits stifles students' academic performance. As a result, studies are needed to establish the relationship between study habits and academic performance of students in the Ekumfi District.

Besides study habits, a review of available literature has indicated that students' learning styles have a positive sway on their academic performance. According to Nzesei (2015), 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 effective learning style boost academic performance whilst ineffective styles reduce performance. Other studies have demonstrated that learning styles do not only affect academic performance, but also influence students' behaviour and attitude to students learning (Stephenson, 2019). 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. Several scholars have explored the relationship between study habits and academic performance among leaners. In their study, Siahi and Maiyo (2015) established a significant positive relationship between study habits and student's performance. Similarly, Garabedian (2014) and Mendezabal (2013) revealed that there is a relationship between study habits and academic performance among students.

Fernald and Keller (1920) propounded the VAK (Visual, Auditory and Kinesthetic) Learning Styles Theory and categorized students into these three groups according to their preferred learning style. Researchers (Bricheno & Younger, 2004; Mulalic, et. al., 2009 & Aultman College, 2008) have adopted the VAK learning styles in their studies and significant relationships were discovered between learning style preferences of students and their academic performance. For instance, Wesonga (2019) found out that students' learning styles positively affect their performance. In essence, appropriate learning style is needed to boost academic performance. Likewise, it was established that students who applied their learning style preferences attained higher academic performance (Stephenson, 2019; Awang, et. al., 2017). Based on these results, it could be expected that students in public basic schools in the Ekumfi District, in particular, and Ghana in general are assisted to recognise their preferred learning styles to obtain good academic performance. The literature reviewed has shown that study habits and learning styles separately influence academic performance. However, some researchers have attempted to investigate whether learning styles mediate the effect of study habits on academic performance. In this direction, Hoeffner (2010) discovered an inconclusive result where he was unable to determine the relationship between these variables. In essence, appropriate learning style is needed to boost academic performance. Likewise, it was established that students who applied their learning style preferences attained higher academic performance (Stephenson, 2019; Awang, et al., 2017). Based on these results, it could be expected that students in public basic schools in the Ekumfi District are assisted to recognise their preferred learning styles so as to obtain good academic performance.

Despite the initiatives implemented by government to obviate the low learning outcomes of public basic school students, the challenge of low performance persists among students in Junior High Schools in Ghana and the Central Region is not an exception. Again, the District League Table which gives an analysis of the performance of the various districts in Ghana disclosed that in 2016 and 2017 Central Region obtained a regional average score of 59% and 65.1% respectively in BECE (UNICEF & CDD-Ghana, 2018). The 2019 report further showed that three districts in the region, including Cape Coast Metropolis (54.30%), Agona East (53.71%), and Gomoa West (51.39%), were among the lowest 10 scoring districts in the 2017 BECE in Ghana (UNICEF & CDD-Ghana, 2020).

Reports on the Basic Education Certificate Examination (BECE) in the Ekumfi District showed that a proportion of students who write the examination fail each year. The results of the Basic Education Examination released from the Examinations Unit of the Ekumfi District Education Directorate in 2021 disclosed that the performance of the students in BECE has not been consistent over the years. The information revealed that the average pass rate of the students in the examination from 2018 to 2021 was 50.0%, and the average failure rate is 50.0%. The pass rate in 2018 was 49% while the failure rate in the same year was 51%. Performance in 2019 improved where 52% of the students passed leaving the rest 48% to fail. There was a drop in performance over the 2019 performance with 48% pass and 52% failure in 2020. Performance improved in 2021 with 51% pass and 49% failure. Even though the performance of the students in the BECE was average, the failure rate implies that some students were unable to qualify for placement into senior high schools, hence their aspiration for further education was truncated. This is a concern to education stakeholders who are obliged to provide education to all citizens as their fundamental human right.

Indeed, researchers have investigated the antecedents of academic performance elsewhere, and discovered that study habits and learning styles influenced students' academic performance (Stephenson, 2019; Awang, et. al., 2017). Therefore, it is probable to assume that the performance of the students in BECE in the Ekumfi District as noted earlier was influenced by the study habits and learning styles of the students. This speculation is informed by the fact that the Ekumfi District is regarded as one of the poorest districts in Ghana (Ghana Statistical Service, 2021) and as such these students who are coming from poor socio-economic background do not get enough time to study as they have to engage in other businesses to support their parents. However, this assumption is untenable since there is no empirical evidence to support it. To fill this gap, this study, therefore, sought to investigate the influence of study habits and learning styles on the academic performance of students in public junior high schools in the Ekumfi District.

The earlier discussion revealed that good study habits enable students to study privately in a systematic and efficient manner which invariably lead to good academic performance. There is unanimity among scholars that good study habit produces positive academic performance while inefficient study habit leads to dismal academic attainment. Moreover, learning styles have been identified as a critical determinant of academic

success of students. Since students have different learning styles, the issue is "will learning styles control the effects of study habits on the academic performance of students?" Even though the separate/individual effect of study habits and learning style on academic performance have been explored by researchers (Ali & Siddiqui, 2018; Awang, et al., 2017), what remains to be explored, however, is whether learning styles strengthen the effect of study habits on academic performance. Drawing on Butakor's (2016) call for stakeholders to find effective solution to improving academic performance of students in Ghana, this study becomes relevant.

The following research questions were formulated to guide the study:

1) What is the relationship between study habits and academic performance of Public Junior High School students in the Ekumfi District?
2) To what extent do learning styles control the influence of study habits on the academic performance of students in Public Junior High Schools in the Ekumfi District?

The findings of the study would have implications for both theory and practice. Theoretically, it is hoped that the findings would help in obtaining empirical evidence to illuminate the combined effect of study habits and learning styles on academic performance, thereby expanding the frontiers of information in the field. This would help to either confirm or disconfirm the applicability of the study habits and learning style inventories in the context of improving students' academic performance. Additionally, it is hoped that the findings of the study would provide information to teachers, school guidance and counseling coordinators, and parents on the effect of students' study habits on their academic performance so that proper motivation and guidance services would be offered to the students. The findings of this research are intended to add to the existing literature on the influence of study habits on academic performance of Junior High School students by investigating the controlling effect of learning styles. It is envisaged that the study would contribute information to curriculum developers to design course materials to suit the study habits and learning style preferences of students to engender good academic performance.

2. Methodology

The study was rooted in the positivist paradigm. Scholars who align with the positivist paradigm argue that social phenomenon has patterns that can be objectively understood by following a sequence of logical analysis, and preventing personal values and cultural ideologies from interfering the inquiry (Carr et al., 2018; Cohen et al., 2018). It is construed from the positivist lenses that, social reality, which constitutes the focus of research, is ready-made, and devoid of human production. In essence, positivism posits that there is a reality that exists apart from one's own perception of it, and that it can be accessed through objective assessment. The rationale for the choice of the positivist philosophy in this study is based on the views of scholars (Creswell & Poth, 2018; Leavy, 2017) that, it affords researchers to examine effects and relationships among variables within the

quantitative framework. Besides, Bachman and Schutt (2020) hypothesized that, the positivist orientation to research enables researchers to predict the influence of one or more variables on another variable through measurement and structured observation of the variables. Therefore, the choice of the positivist philosophy in this study was grounded in justifications put forward by the aforementioned scholars. Aligned to the positivist paradigm, this study adopted the cross-sectional descriptive survey research design with quantitative approach. This design is used to gather information about prevailing conditions or situations for the purpose of description and interpretation (Burn & Veeck, 2020). It is appropriate when the researcher intends to make comparisons, identify trends and relationships between variables. This design was appropriate for the study which sought to investigate the relationship between study habits and academic performance by controlling for the possible effect of learning style. According to Burns and Grove (2011) quantitative approach involves statistical analysis and relies on numerical evidence to examine relationships between variables, thereby justifies the purpose of the study.

Out of the target population of 3164 Junior High School students which comprised 1644 boys and 1520 girls, this study employed Cochran's sample size formula (Burns & Veeck, 2020) to 475 students for the study. This formula is presented as: n $= \frac{z^2(pq)}{e^2}$ where: n = the sample size; z = standard error associated with the chosen level of confidence (typically, 1.96); p = estimated percent in the population (usually 50%); $q = 100 - p$; and e = acceptable margin of sample error. Besides, the sample size is consistent with other theoretical argument such as van Thiel (2022) proposal of at least 10% to 20% of the target population being representative in quantitative studies. Hence, this study considered 475 students representing 15% of the target population as being appropriate for the study. The proportionate stratified random sampling technique was employed to first put the population from the district into five circuits and sex and the proportion of each of the five circuits and sexes of student to the target population were calculated for fair representation in the sample. For instance, Eyisam Circuit had 695 pupils representing about 22% of the target population. Therefore, 22% of the sample size (475) represents about 104 students. The second stage of the selection was based on sex. Out of the population size for Eyisam (695), 332 (48%) were boys and 363 (52%) were girls. Based on these percentages, 50 boys and 54 girls were selected in Eyisam Circuit using simple random sampling technique. The same procedure was followed in the selection of students from the other circuits of the district as well as their sex. The main principle of the stratified sampling is that each member of the population has equal chance of being selected to be in the sample, and that the sample replicates the population (Coolican, 2019).

The instruments for the study included the adapted version of Bakare's (1977) Study Habits Theory, Fernald and Keller (1920) VAK Learning Styles Theory as well as checklist for collecting data on students' academic performance. Whereas face and content validation were done in checking for the validity of the instruments, Cronbach alpha reliability coefficient was utilized in testing for the reliability where the internal

consistencies of the various items of the instruments were checked. McMillan and Schumacher (2010) argued that Cronbach alpha coefficient should be at least 0.70 to be indicative of internal consistency. In line with this recommendation, this study realized Cronbach alpha coefficient of 0.89 for homework and assignments; 0.85 for time allocation; 0.78 for reading and note taking; 0.81 for concentration; 0.83 for time management; 0.84 for auditory, 0.82 for visual, 0.86 for kinesthetic learning styles and 0.85 for the entire questionnaire. Based on this view, it could be observed that the instrument was reliable.

Descriptive statistics (mean and standard deviation) and inferential statistics (Pearson Moment Correlation and Hierarchical Multiple Regression) were used to analyze the data. In order to determine the relationship between the study variables, Pearson Product Moment correlation was employed because it is suitable for determining linear correlation between two variables (Pallant, 2020). To determine the controlling effect of learning style on academic performance, hierarchical multiple regression analysis was carried out using forced entry method. With this method, all the predictor variables were entered into the equation and the relative contribution of each predictor to the outcome variable was assessed (Pallant, 2020). Learning styles were treated as control variables, and study habits and academic performance were the independent and outcome variables respectively in the regression model.

Additionally, the choice to use hierarchical multiple regression in ascertaining whether learning styles control the influence of study habits on the academic performance of students was made valid based on the argument by Tabachnick and Fidell (2013) that hierarchical multiple regression is a suitable tool for analysis when variance on a criterion variable is being explained by predictor variables that are correlated with each other. These scholars further intimated that hierarchical multiple regression is applicable when the focus of the analysis is to assess the effect of a predictor variable while controlling for other variables. These arguments justify the use of hierarchical multiple regression in analyzing research question two. Anonymity, confidentiality, and informed consent were the ethical considerations that were followed in the conduct of the study. Besides, the use of inferential statistics requires that certain assumptions are followed. Accordingly, normality of data, equality of variance, multicollinearity, and scale of measurements were the assumptions that were carefully followed in the conduct of the statistical analysis in the study.

2.1 Analysis of Data and Discussion of Results
Research Question One: What is the relationship between study habits and academic performance of public junior high school students in the Ekumfi District?

The first research question examined the relationship between study habit and academic performance and the interpretation of the strength of correlation coefficients was based on the recommendation of Kothari (2004) that coefficients of 0.5 but less than 1 implies a strong relationship, coefficients greater than 0.3 but less than 0.5 indicate a moderate relationship, and coefficients less than 0.3 show a weak relationship. The

correlation results were tested at 0.05 alpha level, and the results are presented in Table 1.

Table 1: Pearson Correlation Matrix for Study Habits and Academic Performance

	Variables	1	2	3	4	5	6	7	8	9	10	11
	Mean	3.75	3.88	3.66	3.56	3.52	3.61	3.33	3.37	3.35	3.41	3.37
	Std. Dev.	0.66	0.70	0.55	0.64	0.67	0.44	0.16	0.79	0.87	0.69	0.65
1	Examination	1										
2	Homework & Assignments	0.55* (0.00)	1									
3	Reading & Note-Taking	0.62* (0.00)	0.73* (0.00)	1								
4	Concentration	0.35* (0.00)	0.44* (0.00)	0.52* (0.00)	1							
5	Time Management	0.21* (0.00)	0.21* (0.00)	0.24* (0.00)	0.13 (0.01)	1						
6	Overall Study Habits	0.73* (0.00)	0.83* (0.00)	0.84* (0.00)	0.70* (0.00)	0.27* (0.00)	1					
7	English Language	0.06 (0.21)	0.14* (0.01)	0.12* (.02)	0.01 (0.88)	0.19* (0.00)	0.10 (0.06)	1				
8	Integrated Science	0.45* (0.00)	0.54* (0.00)	0.70* (0.00)	0.37* (0.00)	0.22* (0.00)	0.60* (0.00)	0.26* (0.00)	1			
9	Mathematics	0.44* (0.00)	0.46* (0.00)	0.63* (0.00)	0.27* (0.00)	0.29* (0.00)	0.52* (0.00)	0.25* (0.00)	0.71* (0.00)	1		
10	Social Studies	0.41* (0.00)	0.43* (0.00)	0.64* (0.00)	0.40* (0.00)	0.12* (0.02)	0.54* (0.00)	0.21* (0.00)	0.60* (0.00)	0.51* (0.00)	1	
11	Overall Academic Performance	0.42* (0.00)	0.49* (0.00)	0.65* (0.00)	0.31* (0.00)	0.28* (0.00)	0.54* (0.00)	0.67* (0.00)	0.81* (0.00)	0.80* (0.00)	0.71* (0.00)	1

*Correlation is significant at p< 0.05 (2-tailed)
Note: P-values are in parentheses

The Pearson correlation results in Table 1 reveal a moderate and statistically significant positive relationship between examination and overall academic performance (r=0.42, p=0.000, 2-tailed), and moderate and statistically significant positive relationship was observed between homework and assignments and overall academic performance (r=0.49, p=0.000, 2-tailed). The data also established a strong and statistically significant positive relationship between reading and note-taking and overall academic performance (r=0.65, p=0.000, 2-tailed) whereas concentration made a moderate and statistically significant positive association with overall academic performance (r=0.31, p=0.000, 2-tailed). It is further noticed that there was a weak but statistically significant positive relationship between time management and overall academic performance (r=0.31, p=0.000, 2-tailed), and overall study habits attained a strong and statistically significant positive relationship between with overall academic performance (r=0.54, p=0.000, 2-tailed). Based on these results, it is established that students study habits are crucial in ensuring good academic performance among public Junior High School students in the Ekumfi District.

Research Question Two: To what extent do learning styles control the influence of study habits on the academic performance of students in public Junior High Schools in the Ekumfi District?

To verify that the control variable (learning styles) correlates with the dependent variable (academic performance), Pearson correlation was carried out and the results are presented in Table 2.

Table 2: Pearson Correlation Matrix for Learning Styles and Academic Performance

		1	2	3	4	5	6	7	8
	Mean	3.44	3.59	3.26	3.33	3.37	3.35	3.41	3.37
	Standard Deviation	0.47	0.15	0.34	0.16	0.79	0.87	0.69	0.65
1	Auditory Learning Style	1							
2	Visual Learning Style	0.01 (0.89)	1						
3	Kinesthetic Learning Style	0.02 (0.74)	0.18* (.00)	1					
4	English Language	-0.01 (0.81)	0.33* (0.00)	-0.02 (0.70)	1				
5	Integrated Science	0.05 (0.33)	0.23* (0.00)	-0.01 (0.78)	0.26* (0.00)	1			
6	Mathematics	0.01 (0.86)	0.27* (0.00)	-0.02 (0.68)	0.25* (0.00)	0.71 (0.00)	1		
7	Social Studies	0.05 (0.30)	0.09 (0.07)	0.00 (0.94)	0.21* (0.00)	0.60* (0.00)	0.51* (0.00)	1	
8	Overall Academic Performance	0.03 (0.60)	0.33* (0.00)	-0.02 (0.71)	0.67* (0.00)	0.81* (0.00)	0.80* (0.00)	0.71* (0.00)	1

*Correlation is significant at $p < 0.05$ (2-tailed)
Note: P-values are in parentheses

The results in Table 2 reveal that there was a relationship between learning styles and academic performance even though some of the relationships were not significant. Specifically, visual learning style made a moderate and statistically positive relationship with academic performance (r=0.33, p=0.00); auditory learning style had a weak and insignificant positive relationship with academic performance (r=0.03, p=0.60); and kinesthetic learning style had a negative correlation which was not statistically significant (r=-0.02, p=0.71), all at 0.05 alpha level. The study proceeded to conduct a hierarchical multiple regression where learning styles were treated as control variables, and study habits and academic performance were the independent and outcome variables respectively in the regression equation.

The results of the model summary for Models One and Two as well as the ANOVA results are presented in Table 3.

It could be observed from Table 3 that the learning styles collectively contributed 11.9% variance to academic performance which was statistically significant [F (3, 376) = 16.947, p=0.000] at 0.05 alpha level.

Table 3: Multiple Regression and ANOVA Results for
Learning Styles, Study and Academic Performance

	Model Summary			ANOVA Results				
Model	Model 1	Model 2		Sum of Squares	Df	Mean Square	F	Sig.
1			Regression	19.003	3	6.334	16.947	0.000
			Residual	140.543	376	0.374		
			Total	159.546	379			
2			Regression	85.358	8	10.670	53.357	0.000
			Residual	74.188	371	0.200		
			Total	159.546	379			
R	0.345	0.731						
R²	0.119	0.535						
Adjusted R²	0.112	0.525						
Std. Error of the Estimate	0.611	0.447						
R² Change	0.119	0.416						

The results also indicated that with the inclusion of study habits into the model, all the predictors (both learning styles and study habits) accounted for 53.5% variance in academic performance which demonstrated an improvement of 41.6% over model one which was assessed to be statistically significant [F (8, 371) = 53.357, p=0.000] at 0.05 alpha level. Review of Table 3 has shown that there were 0.7% and 1% shrinkage in the population for the contribution of learning styles and study habits on academic performance respectively. The study further investigated the contribution of the individual predictors to academic performance, and the results are displayed in Table 4.

Table 4: Standardized and Unstandardized Coefficients for Learning Styles and Study Habits

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.648	0.257		10.315	0.000		
	ALS	0.038	0.067	0.027	0.562	0.574	1.000	1.000
	VLS	0.197	0.028	0.350	7.100	0.000	0.967	1.035
	KLS	-0.037	0.024	-0.077	-1.565	0.118	0.966	1.035
2	(Constant)	0.721	0.249		2.896	0.004		
	ALS	-0.241	0.053	-0.174	-4.571	0.000	0.860	1.162
	VLS	0.150	0.021	0.265	7.176	0.000	0.916	1.091
	KLS	-0.043	0.017	-0.088	-2.437	0.015	0.956	1.046
	Examination	-0.018	0.046	-0.018	-0.385	0.700	0.569	1.756
	Homework and Assignments	-0.037	0.050	-0.040	-0.745	0.457	0.433	2.308
	Reading and Note-Taking	0.818	0.074	0.699	11.106	0.000	0.317	3.158
	Concentration	-0.019	0.043	-0.019	-0.451	0.652	0.700	1.429
	Time Management	0.102	0.036	0.105	2.842	0.005	0.922	1.084

It could be observed from Table 4 that with the absence of study habits in the regression model, visual learning style contributed significantly to academic performance (β=.350, p=0.000) whilst auditory (β=0.027, p=0.574) and kinesthetic (β=-0.077, p=0.118) learning styles could not contribute significantly to academic performance. Having included all the predictors (learning styles and study habits) into the equation, it was established that auditory learning style (β=-0.174, p=0.000), visual learning style (β=0.265, p=0.000), kinesthetic learning style (β=-0.088, p=0.015), reading and note-taking (β=0.669, p=0.000), and time management (β=0.105, p=0.005) made a significant unique contribution to academic performance whilst the individual contribution of examination (β=-0.018, p=.700), homework and assignments (β=-0.040, p=0.457), and concentration (β=-0.019, p=0.652) did not reach statistical significance.

Based on these results, three conclusions were derived: learning styles collectively influenced academic performance in the Ekumfi District; study habits collectively influenced academic performance when the learning styles were controlled in the Ekumfi District; and learning styles and study habits together contributed significantly to academic performance better than the unitary contributions of learning styles on one hand, and study habits on the other to academic performance. However, it was auditory, visual, and kinesthetic learning styles, and reading and assignment, and time management that were needed to boost academic performance in the Ekumfi District. Therefore, it could be hypothesized that academic performance of junior high school students in the Ekumfi District would improve when they develop and practice appropriate study habits and learning styles in their studies.

3. Discussion of the Results

The findings on research question one show that there is a strong and statistically significant positive relationship between study habits with overall academic performance (r=0.54, p=0.000, 2-tailed). The result of this study validates the findings of Garabedian (2014) and Mendezabal (2013) who discovered a strong relationship between study habits of students and their academic performance. The second research question stated in this study was to find out the extent to which learning styles control the influence of study habits on the academic performance of students in the Ekumfi District. It was revealed that learning styles uniquely contributed 11.9% to academic performance which was statistically significant [F (3, 376) = 16.947, p=0.000]. This discovery is consistent with earlier studies (Aripin et al., 2008; Ali et al., 2009; Dunn et al., 2009) where learning styles positively affected academic performance. Both learning styles and study habits contributed 53.5% to academic performance indicating 41.6% increase in performance when learning styles were used. The results suggested that even though learning styles and study habits separately influence academic performance, learning styles strengthen the effect of study habits on performance. This finding conflicts with Hoeffner's (2010) finding where he could not establish the effects of study habits on academic performance whiles controlling for learning styles.

4. Conclusions and Recommendations

There is enough evidence from the study that study habits are vital in determining academic performance of students. Accordingly, it is anticipated that stakeholders would guide students to develop and apply appropriate study habits to promote good academic performance. Besides, academic performance of the students would be better if attention is also paid to their learning styles. Therefore, the combination of study habits and learning styles are required if stakeholders desire to improve academic performance in the Ekumfi District. The study revealed that the combined effect of study habits and learning styles on academic performance was stronger than the individual influence of these variables. Besides, academic performance of the students would be better if attention is also paid to the students learning styles. Thus, it is recommended that strategies aimed at improvement in study habits should run concurrently with approaches to enhancing learning styles of the students for better results. Finally, teachers should be equipped and encouraged to choose instructional methodologies and materials to suit the study habits and learning styles of the students so as to enhance academic performance.

4.1 Limitations of the Study

The effect of study habits and academic performance among public Junior High School students in the Ekumfi District while investigating the controlling effect of learning styles as reported in this study were based on the perception of the respondents, and, therefore, represent their subjective view at the time of data collection. Even though the researcher attempted to reduce the degree of subjectivity of the responses through reliability and validity checks, it is difficult to be certain that the findings reported in the study completely represent the situation on the ground. Besides, the characteristics of the variables investigated in this represented the true picture at the time of data collection. Therefore, as the study habits and learning styles are likely to change over time, the influence of these variables on students' academic performance are likely to change. Therefore, the findings of the study may not be generalized beyond the time and scope of the study.

4.2 Suggestions for Further Studies

Based on the finding that 46.5% in academic performance was unaccounted for by the variables involved in this study, it is suggested that further studies are conducted to examine the effects of other variables that could account for academic performance of the students. Besides, factors that affect the study habits and learning style preferences of the students are among the pertinent variables of interest that I think future researchers must endeavour to explore. This I believe would help in expanding the frontiers of knowledge in the field.

Conflict of Interest Statement

The author declares no conflicts of interest.

About the Author

Joseph Bentil is a Senior Lecturer at the Department of Basic Education, University of Education, Winneba with specialization in Social Studies Education. Currently, he teaches courses like Research Methods, Environmental and Social Issues in Contemporary Ghana, Conflict Management and Peace Building, Assessment Techniques in Social Studies, Youth and National Development. As part of his PhD studies, Joseph Bentil won a 4-Month ERASMUS+ International Credit Mobility Grant and studied at the University of Jyvaskyla, Finland. His research interest includes Study Habits and Learning Styles of students, Assessment in Social Studies, Teacher Self Efficacy Beliefs and Teacher Job Performance related issues.

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