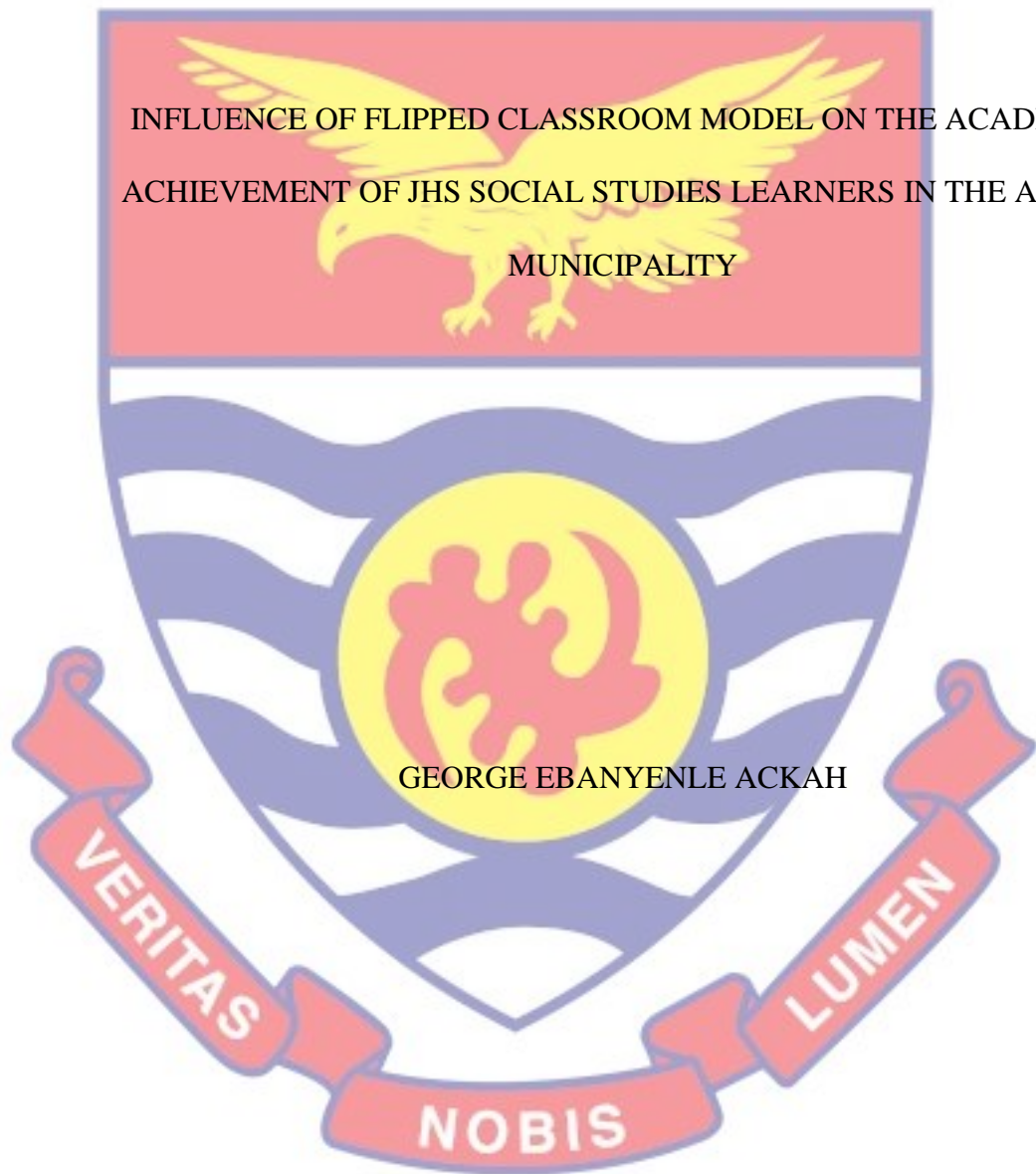


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A thesis submitted to the Department of Basic Education of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Basic Education

SEPTEMBER 2021

DECLARATION

Candidate's Declaration

I hereby declare this thesis is the result of my original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature Date:.....

Name:

Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Supervisor's Signature Date.....

Name:



ABSTRACT

The world is enriched with technology with all fields employing such in their daily activities. Teaching with technology has been the subject of several discussions in various research articles with some calling for the imminent application of technology by teachers in the classroom regardless of context.

Consequently, this study was conducted to examine the influences that a technologically rich flipped classroom has on JHS Social Studies learners' academic attainment within the Aowin Municipality. Adopting the quasi-experimental research design, a sample of 100 students and 10 teachers were selected using multi-stage and convenient sampling techniques respectively.

Tests and questionnaires were the main instruments for data collection from respondents, the study used descriptive and inferential statistics (t-tests) to reveal that flipping the classroom significantly influences the JHS Social Studies learners' academic achievement. The study also revealed that learners have positive perceptions about the use of the flipped classroom in teaching Social Studies in the Aowin Municipality. It was also seen that despite learners' positive perception in relation to flipping the Social Studies classroom, they face numerous challenges in learning with the model. Teachers were also seen from the study to have a positive view about using the flipped classroom methodology to teach Social Studies within the Aowin Municipality. Consequently, it was recommended that Social Studies teachers should employ the model in teaching by minimising the challenges learners face in using the flipped classroom to learn.

KEYWORDS

Traditional method

Flipped classroom

Constructivism

Behaviourism

Taxonomy

NaCCA



ACKNOWLEDGEMENTS

This work could not have reached this level without the assistance of the following personalities. In the first place, I express my unending appreciation to my supervisor and mentor, Dr Hippolyt Dickson Angbing of the Department of Basic Education, University of Cape Coast for providing the guidelines, directions and encouragements at the time I nearly gave up on continuing with the work. I am very delighted to have him as my supervisor who through this work, has helped me to learn a lot. May God's abundant blessings be upon him.

I also appreciate the effort of Mr Solomon Appiah of Enchi College of Education in providing financial support and directions for the conduct of this research. I am also highly indebted to Mr Emmanuel Adom Ashun, Vice Principal of Enchi College of Education, Emmanuel Donkor, the SISO of Enchi Circuit of the Ghana Education Service, Mr Patrick Kwame Amo, my former headmaster for the supportive roles they played along the line in putting up this piece of work together. I cannot forget the effort of the Aowin Municipal Education Director, Mr Sebastian Attramah Diaw for permitting me to use the students and teachers under his jurisdiction.

Finally, I extend my deepest appreciation to all the teachers and learners who wasted their bundles and time to ensure that this project becomes a reality. May God's ever bountiful blessings be upon you all.

DEDICATION

To my late father Cosmos Erzoah Ackah and my mother, Faustina Erzoah.



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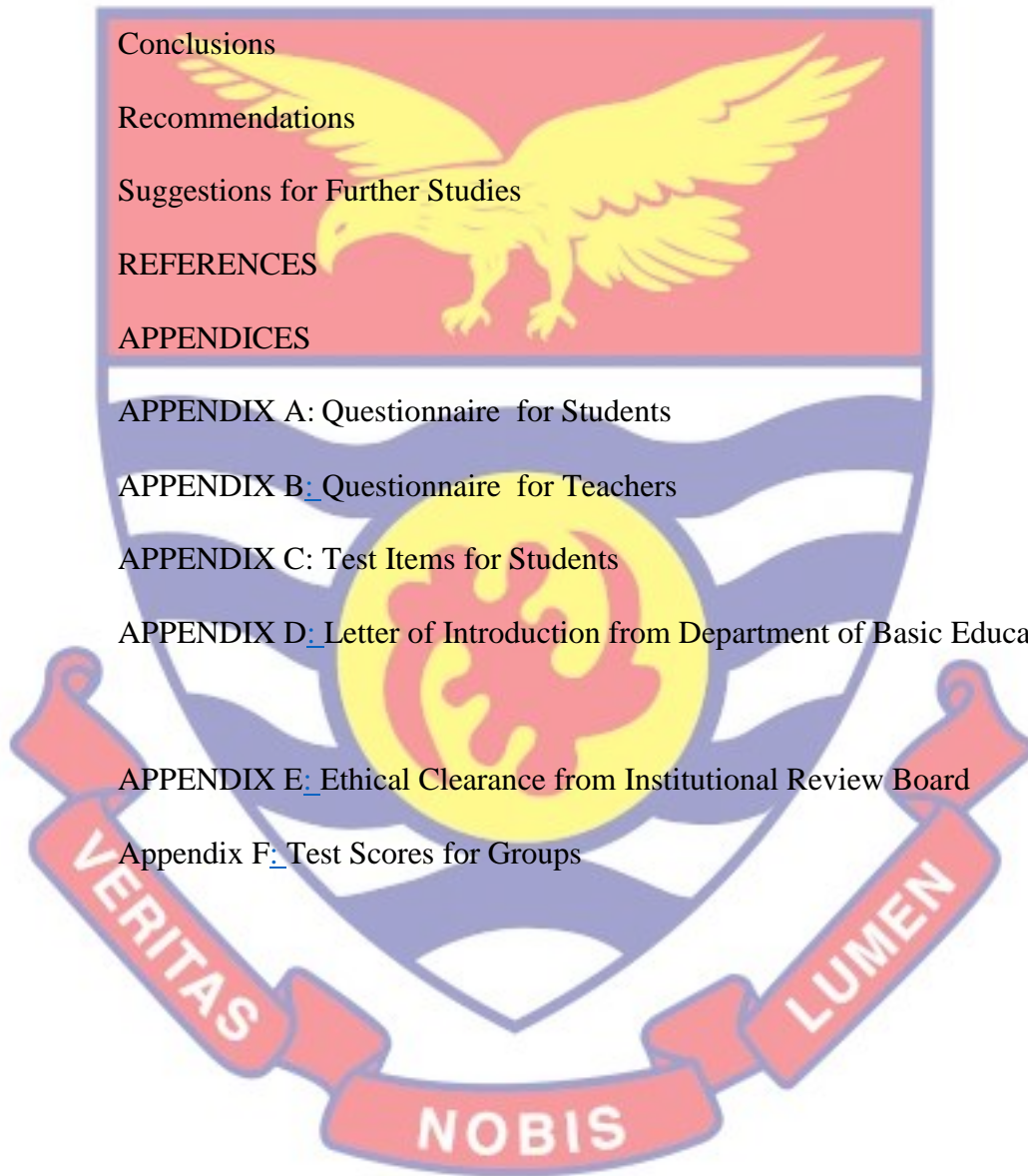
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CHAPTER ONE

INTRODUCTION

Introduction

The study focused on the influence that a technologically-rich flipped classroom model has on the academic achievements of Junior High School Social Studies learners in the Aowin Municipality. In this chapter, the background to the study, problem statement, purpose of the study, research questions and hypotheses, significance of the study, delimitation, limitation and how the entire study was organised are discussed.

Background to the Study

The call for eminence education for all citizens of a nation as specified by goal four of the Sustainable Development Goals (SDG) of the United Nations (2015), is a call for nations to offer subjects that inculcate in their citizens, facts, skills, attitudes, and values that are needed to solve societal and global problems. As a member of the United Nations, Ghana has put in place several subjects of study in their schools to ensure the attainment of goal four of the SDGs. Among the subjects studied, Social Studies stands to be the only one that offers students the facts, skills, attitudes, and values that empower them to become active, informed, innovative, and responsible citizens as indicated by the National Council for Curriculum and Assessment (2020).

Social Studies promotes civic competence in the learner. A civic competent person recognises the needs and problems of society and works toward solving those problems. In an era driven by technology, a civic

competent person should be technologically literate and innovative to solve the problems in society. The Common Core Programme (CCP) curriculum for Social Studies calls for the need to make learners innovative, active, and informed in preparing them to assume responsibilities in their society (National Council for Curriculum & Assessment, 2020). This needs a teaching approach that is rich in making learners active, innovative, and informed.

To be able to find out if the characteristics specified in the curriculum to be acquired by learners have been achieved, there is a need to measure the academic achievement of learners. For better academic achievement, students need to be involved greatly during the teaching and learning process, thus, calling for a teaching approach that suits the learning style of every learner. But research has found out that teaching methods amid this technological age have been purely traditional where teachers become carriers of knowledge and the students enter classes without knowing what they are going to learn (Santos & Serpa, 2020). These traditional methods according to Joksimović et al. (2019), make students enter class with little or no prior knowledge, waste a lot of time and make students passive and bored.

Amid Covid-19 and technological age, Social Studies teachers must adopt a variety of approaches that are rich in technology which will ensure students' participation during the learning process. Thus, calling for the adoption of the flip classroom model to help produce effective, reflective, and responsible citizens.

As Sezer (2017) puts it, the flipped classroom is a method where the teacher gives the content of a lesson in the form of videos to learners for them to watch at home and prepare before going to class. Pandow, Inan and Ananda

(2020) also reveal that the flipped classroom makes content of a lesson to be presented to learners online before the normal face-to-face lesson. However, neither Sezer (2017) nor Pandow et al. (2020) revealed the identity of the one who presents the content in the video either on a disc or online. But they agree that flipping the classroom leads to high academic achievement as compared to the traditional teaching approaches.

Burke and Fedorek (2017) indicate that the flipped classroom makes learners understand key concepts of a lesson to the highest depth through engagement in practical lessons. This is in line with the philosophy of teaching Social Studies in Junior High Schools and Senior High Schools which stresses attainment of competencies through social constructivism and realism.

A publication by the Flipped Learning Network (2014, as cited in Carter, Carter & Foss, 2018, p.1), states that the individual in a flipped learning pedagogy gets enough time to view concepts over and over to gain understanding before going to class. McCartney (2016) says that workload, large class size and limited class time do not provide the teacher in the traditional teaching model with an opportunity to pay attention to individuals who may have problems during teaching and learning. However, the use of the flip learning model offers the teacher an opportunity to tailor teaching and learning to the individual and not the entire group.

The flipped classroom methodology is a new teaching and learning methodology with scanty literature. Extant researches on the flipped classroom have mostly concentrated on the use of the model in higher educational settings (Burke & Fedorek, 2017; Carter et al., 2018; Hussey et al., 2015; Pandow et al.,

2020; Santos & Serpa, 2020) with little researches focusing on middle and secondary schools (Gelgoot et al., 2020; Hussey et al., 2015; Sezer, 2017).

Most of these researches have also examined the procedures leading to effective employment of the flipped classroom (Hussey et al., 2015; Woosey & Miles, 2019), the effectiveness of the process (Carter et al., 2018; Sezer, 2017), challenges of the flipped classroom (Santos & Serpa, 2020), students' engagement (Burke & Fedorek, 2017), comparison between the traditional methods of teaching and the flipped learning model (Gelgoot et al., 2020), and academic achievement (Hussey et al., 2015).

Few Ghanaians have conducted studies regarding the flipped classroom's usage in Ghanaian schools. Yeboah, Ampadu, Ahwireng, and Okrah (2020) revealed in their study that most teachers in Ghana have not conceptualized the flipped classroom model. Out of the few existing pieces of research on the flip classroom in Ghana, most of them are in subject areas such as Leatherworks (Mensah et al., 2017) and Science (Quansah et al., 2018) other than Social Studies.

Aowin Municipality is among the nine districts and municipalities within the Western North Region of Ghana with farming as the main occupation of the people living in the area. Though a predominantly farming area, people in the Aowin Municipality give a lot of attention to educating their children. In light of this, teachers within the Municipality are always looking for the best approaches to help learners to perform better in national examinations.

The Social Studies syllabus recommends the use of the constructivists' approach, such as social constructivism and realism to teach the subject, but teachers always resort to using the traditional teaching methods where learners

become aware of the content only when they are in school. It has been observed that teachers enter the class, use any of the traditional methods to deliver content, and when their time is almost up, assign tasks to students to perform. This does not offer learners enough time to perform the task as they have to make way for the next subject. Eventually, most of the students take such tasks to the house to complete them. In some instances where learners have the opportunity to do an assigned task in class, they get little time while the teacher may or may not be available to help learners who have difficulty in dealing with the task given.

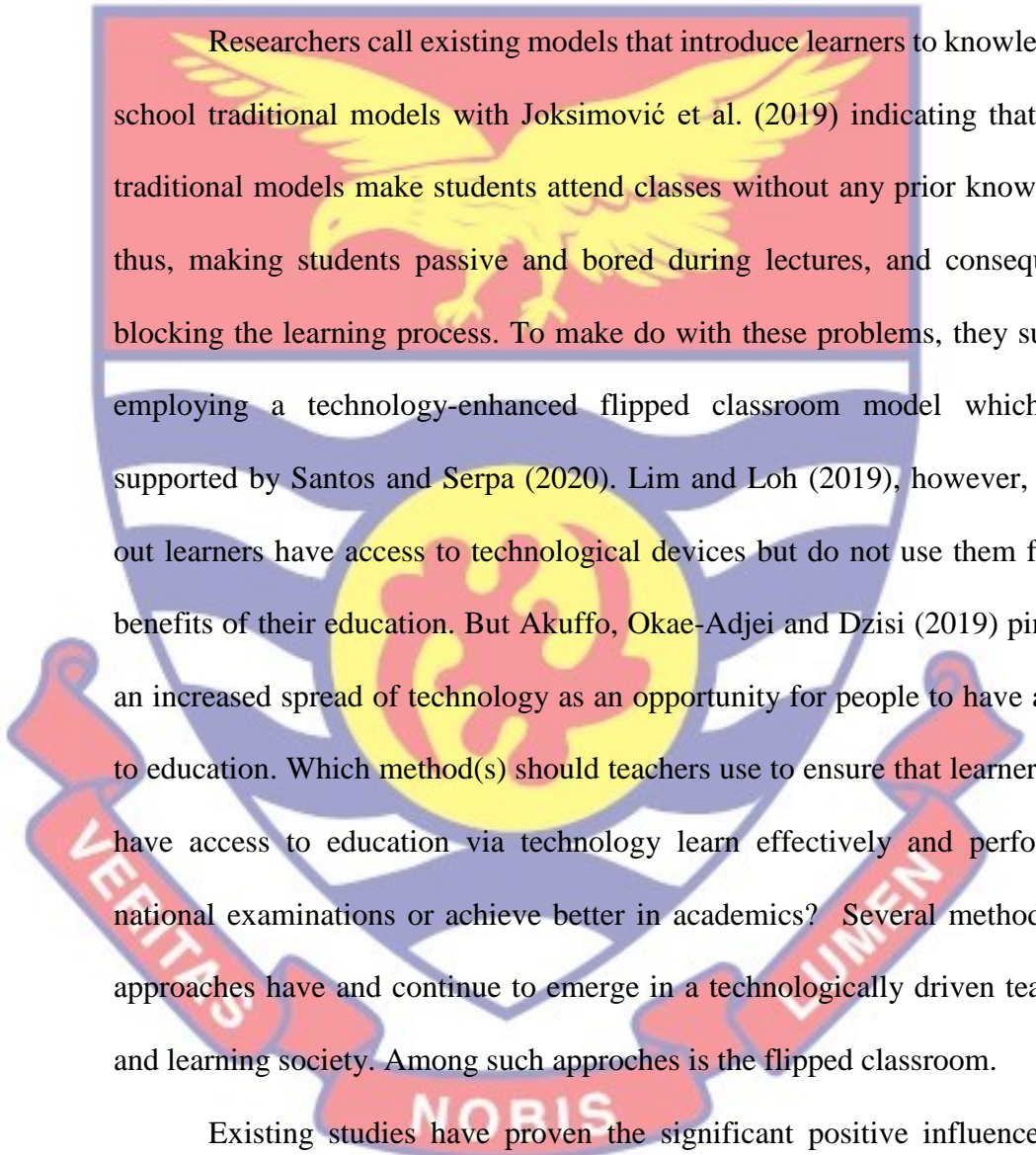
There have been several positive findings of the flipped classroom. However, the influence the model has on the academic achievement of JHS Social Studies learners within the Aowin Municipality is yet to be known. This research work was intended for finding out the influence that a flipped classroom JHS Social Studies class has on learners' academic achievement in the Aowin Municipality.

Statement of the Problem

The main motive for taking learners to school is for them to achieve excellence in academic performance despite the many other values that will accompany their learning process. The degree of academic achievement of learners depends mostly on the methods teachers use (Atandi et al., 2019; Ganyaupfu, 2013).

Teaching and learning theories have recommended the use of different methods to ensure that learners reach the highest point in their academic pursuits. While some theories advocate the need for teachers to impart knowledge to their learners, others suggest that learners should be made to

construct their knowledge. These points of view have led to the production of many teaching approaches with Social Studies opting for the constructivism approach to the teaching of the subject in Ghana. Studies show that a lot of the prevailing teaching models only introduce learners to knowledge when they are in school (Yoon et al., 2020).

The logo of the University of Cape Coast is a watermark in the background. It features a yellow eagle with its wings spread, perched on a shield. The shield is divided into four quadrants, each containing a different symbol. Below the shield is a red banner with the Latin motto "VERITAS NOBIS LUMEN".

Researchers call existing models that introduce learners to knowledge at school traditional models with Joksimović et al. (2019) indicating that these traditional models make students attend classes without any prior knowledge, thus, making students passive and bored during lectures, and consequently blocking the learning process. To make do with these problems, they suggest employing a technology-enhanced flipped classroom model which was supported by Santos and Serpa (2020). Lim and Loh (2019), however, found out learners have access to technological devices but do not use them for the benefits of their education. But Akuffo, Okae-Adjei and Dzisi (2019) pinpoint an increased spread of technology as an opportunity for people to have access to education. Which method(s) should teachers use to ensure that learners who have access to education via technology learn effectively and perform in national examinations or achieve better in academics? Several methods and approaches have and continue to emerge in a technologically driven teaching and learning society. Among such approaches is the flipped classroom.

Existing studies have proven the significant positive influences and impact that flipping a classroom has towards learners' academic attainment. Moormann et al. (2015) for instance, found out that the flipped classroom results in high academic achievement in middle and high school learners. However, this academic piece took place in American and also in different subject areas

other than Social Studies. Similarly, Peterson (2016) found out through quasi-experimental research that the flipped classroom produced a significant academic achievement relative to the traditional mode of teaching. Again, this research was carried out in the American setting.

According to Sezer (2017), the flip classroom makes students responsible for their learning, personalizes teaching and learning, and makes the teacher a guide in the classroom. Flipping the classroom is regarded as a model that promotes 21st-century skills if used appropriately (Cabı, 2018; Santos & Serpa, 2020).

Mensah, Yeboah, and Adom (2017) found out that 96% of participants had scores above an average mark of five when the flipped classroom was used. Yeboah et al. (2020) investigated the views of Ghanaian teachers on using flipped approach as an instructional strategy. The study made use of inferential and descriptive statistics, to reveal teachers' acknowledgement of the importance of the flipped classroom instructional strategy but teachers have little experience and expertise in using it.

Literature available to the researcher suggests that it appears no research examined the influence that the flipped classroom instructional strategy has on the academic achievements of Social Studies learners in the Junior High Schools in the Aowin Municipality. This reveals that there exists a gap in research involving the flipped classroom approach and its influences on Junior High School Social Studies learners' academic achievement in the Aowin Municipality. As a result of this reason, the researcher investigated the influence that flipping a Social Studies classroom has on the academic achievements of Junior High School (JHS) learners within the Aowin Municipality.

Purpose of the Study

The main purpose of the study was to find out the influence the flipped classroom model has on academic achievements of JHS Social Studies learners in the Aowin Municipality of Ghana. Specifically, the research addressed the following:

- i. the influence flipped classroom model has on JHS Social Studies learners' academic achievement within the Aowin Municipality.
- ii. the perception of JHS Social Studies learners on employing the flipped classroom approach to teaching in the Aowin Municipality.
- iii. challenges JHS Social Studies learners face in using flipped classroom models to learn Social Studies in the Aowin Municipality.
- iv. the views of JHS Social Studies teachers in adopting flipped classroom model to teach Social Studies in the Aowin Municipality.

Research Questions

The following research questions guided the study:

1. what influence has flipped classroom got on JHS Social Studies learners' academic achievement in the Aowin Municipality?
2. what is the perception of JHS Social Studies learners on using flipped classroom model in teaching and learning Social Studies in the Aowin Municipality?

3. what challenges do JHS Social Studies learners face when using flipped classroom model to learn Social Studies within the Aowin Municipality?
4. what is the view of JHS Social Studies teachers in employing flipped classroom model to teach Social Studies within the Aowin Municipality?

Hypothesis

H₁: There is no statistically significant difference between the pre-test mean score of JHS Social Studies learners taught using flipped classroom and the pre-test mean score of JHS Social Studies learners taught using traditional methods of teaching.

H₂: There is no significant difference between the post-test mean score of JHS Social Studies learners taught using flipped classroom and the post-test mean score of JHS Social Studies learners taught using traditional methods of teaching.

Significance of the Study

The findings of the study would be of immense assistance to Social Studies researchers aiming to conduct a similar study at any place. It will also serve as a guide to teachers who would like to use the flipped classroom model in teaching any subject. The study will also inform policymakers of the need to consider modern trends in teaching methods during policy formulation. Findings from the study will help parents to play their part as stakeholders in educating their children. Findings from the study will also help the Ghana Education Service (GES) to consider its stance on the use of electronic devices

such as smartphones and laptops in Junior High Schools and Senior High Schools in Ghana.

Delimitation

Despite the various recommendations by researchers to consider research on the type of learners who excel in the use of the flipped classroom, this study was delimited to the use of flipped classroom and its influence on academic achievement of JHS Social Studies learners in the Aowin Municipality. The study also examined only the perception of JHS Social Studies learners on the use of the flipped classroom in teaching and learning Social Studies in the Aowin Municipality. The research further delimited itself to the challenges that JHS Social Studies learners face in learning through the flipped classroom. It furthermore delimited itself to only the views that JHS Social Studies teachers have on the use of the flipped classroom in teaching Social Studies at the Junior High Schools in the Aowin Municipality. The research was carried out in the Enchi township and surrounding communities using only JHS 2 learners.

Limitation

The use of google forms to conduct the test lent itself to learners' to discuss the questions before selecting the options on the form. Learners were to take the test at their preferred time so the researcher could not monitor how individuals took the test and that affected the generalisability of the results. The researcher, however, embedded the formplus plugin in google forms to time the test takers in a bid to prevent them from asking their friends the answers to the specific test items. Also, the researcher had to explain certain words on the questionnaire to learners who found it difficult to comprehend and that affected

the responses they gave, which in turn, affected the generalisability of the results. Again, the lack of randomisation in the design used for the study did not allow the researcher to generalise for the entire population.

Operational Definition of Terms

The following terms have been explained as used in the study:

Traditional Method: Any of the teaching and learning methods that introduce learners to the content only when they are in the classroom or school and not before school.

FCM: The acronym FCM as used in the study refers to the Flipped Classroom Model and implies any method of teaching that introduces learners to the content of the lesson at home and provides learners with the opportunity to solve practical problems in class with the teacher as a facilitator.

JHS: This is the second level of the Ghanaian educational system. It is the level that learners enter after going through six years of primary schooling.

GES: This is an agency under the Ghanaian Ministry of Education which is responsible to implement all pre-tertiary education policies by the government. It is also mandated to supervise all activities of public pre-tertiary institutions within the nation.

NaCCA: This is an agency under the Ministry of Education responsible for developing curriculum and teaching and learning resources for all pre-tertiary institutions in Ghana, whether public or private.

CCP: The Common Core Programme acronymised as CCP is a curriculum designed by NaCCA to ensure that learners in the first four years of high school education study a common programme before deciding on which part to pursue in higher education.

MEO: In the Ghanaian Education System, MEO stands for Municipal Education Office. It is a decentralised office of the GES that sees the administration, monitoring, and supervision of all pre-tertiary schools within a given Municipality.

Organisation of the Study

This piece of work was put together in five chapters. Chapter One focused on the introduction where a brief contextual information was provided. The problem that necessitated the study was also stated alongside the driving motive of the study. The research questions that guided the study were spelt in chapter one alongside the hypotheses. The significance of the study, the delimitation, limitation, definition of terms, and how the study was organised were all spelt in this chapter. Chapter Two focused on the review of related literature. The review contained the conceptual review, theoretical and empirical reviews with each containing its sub-themes. Chapter Three dealt with the methods employed by the researcher in carrying out the study. The research design, population and sample, sample selection procedure, and the research instruments were all stated in this chapter. The data collection procedure and the data analysis plan were all given in chapter Three. Chapter Four focused on the results and discussion of the findings obtained based on the research questions and hypotheses. Chapter Five gave the summary, conclusion, and

recommendations based on the findings of the study. Areas for further research were also given.



CHAPTER TWO

LITERATURE REVIEW

Introduction

This part of the study examined concepts connected to flipped classroom, theories undergirding the flipped classroom' usage in teaching, the empirical review of studies related to the flipped classroom and academic achievement, the perception of learners on the use of the flipped classroom model, the challenges learners face in using the flipped classroom, and the views of teachers on the use of the flipped classroom in teaching Social Studies. A summary of the chapter was given after the entire review of the various sub-themes to ensure that anyone who picks up this piece of work to read does not miss important content(s). The various sub-themes for the review are as follows:

- i. The Conceptual Review
 - a. What is a flipped classroom?
 - b. Importance/advantages of using the flipped classroom in teaching
 - c. Challenges of using the flipped classroom in teaching and learning
 - d. Technologies needed to use the flipped classroom for effective teaching and learning
 - e. How to use the flipped classroom for effective teaching and learning
- ii. Theoretical Framework

- a. Behaviourism
 - b. Constructivism
 - c. Blooms Taxonomy
- iii. Empirical Review
- a. Influence of the flipped classroom on academic achievement
 - b. Perception of learners on the use of the flipped classroom in learning
 - c. Challenges learners face in using the flipped classroom in learning
 - d. The views of teachers in using the flipped classroom in teaching

Conceptual Review

What is a Flipped Classroom?

The concept of the flipped classroom is among the many concepts which defy a single definition. Confirming that flipped classroom holds different definitions and explanations according to the individual's opinion and usage, Bergmann and Sams (2012) said we do not have any word or idea called "the flipped classroom" (p.6). This statement was made concerning the different methodologies and definitions people give to the idea of the flipped classroom. Talbert (2018) concurs in his webpage article that one of the challenges facing the flipped classroom research is the definition of the flipped classroom. Låg and Sæle (2019) re-echoed the declaration of Bergmann and Sam (2012) by attesting that "definitions of the flipped classroom in the literature vary" (p.1). These differences that exist in definitions are apparently due to the technologies

used, the methods prescribed in the usage of the model, the engagement of learners and the responsibilities of the teacher.

In a research article, the flipped classroom learning approach was defined as an “approach where the teacher provides online activities for students to complete before they come to lessons” (The Flipped Learning Network, 2014 as cited in Woosey & Miles, 2019). This definition suggests to the teacher to provide the content of what learners are supposed to learn in the flipped classroom model through online activities. This means the teacher needs to adequately plan and prepare content(s) for learners to attend to while they are at home. The Flipped Learning Network emphasizes the significance of online learning if an instructor wants to successfully flip his or her class, thus, projecting online learning activities as a key feature in the implementation of the flipped learning model. There cannot be any online activity without internet access. This means a classroom can be flipped in situations where there is internet accessibility. The argument now becomes, should teachers and students in areas with poor or no network quality ignore using flipped classroom because they do not have internet accessibility?

In order not to create any room for questioning the mode of carrying out the flipped classroom, Abeysekera and Dawson (2015) preferred not to indicate the mode of carrying out the flipped classroom. They, therefore, provided a triadic definition for the concept of flipped classroom. According to them, the flipped classroom embraces “a set of pedagogical approaches that:

1. move most information-transmission teaching out of class;
2. use class time for learning activities that are active and social, and

3. require students to complete pre-and/or post-class activities to fully benefit from in classwork” (p.6).

The first part of the definition given by Abeysekera and Dawson (2015) makes it explicit that information is transferred to learners in a flipped classroom. However, this information is not transferred to learners in the classroom but rather at home. The second aspect of the definition emphasizes the use of time in the classroom for social and active learning activities. This calls for activities that build on the learner’s social skills, suggesting that a lack of such skills would lead to ineffective communication among peers as well as between instructors and students. The last part of the definition emphasizes the need for students to focus on the assigned activities until they are completed either before class or after class. It is to be noted that this definition did not state a particular activity that constitutes a flipped learning neither does it condemn existing methods of teaching.

Additionally, the flipped classroom is defined as an approach where an “instruction that students traditionally receive during class time is completed at home, and practice tasks that are traditionally performed as homework are performed in class with support from the teacher” (Gelgoot et al., 2020, p. 452). This definition supports earlier claims that instruction that students, hitherto, received in school is rather obtained at home in a flipped classroom model while real-life practices and discussions are done in the school. Like the definition by Abeysekera and Dawson (2015), the mode of content delivery at home was not specified by this definition. Is it that the teacher moves to the houses of learners and offers the instructions physically or through videos and reading assignments or online as in the case of the Flipped Learning Network?

Wenzler (2017) was tight-limbed in stating the mode of information transmission from the teacher to students in his definition of the flipped classroom model. He preferred to say that a flipped classroom is a teaching model where the teacher shifts from being a disseminator to a facilitator or a guide that leads learners to discover new ideas or information. A critical study of this definition reveals that emphasis is placed on the activities of the teacher rather than the learners. His focus is on what the teacher does rather than what the learners do. He thinks the teacher should be someone who systematically leads learners to discover new ideas and not someone who provides learners with knowledge. In all instances, whether the teacher is a disseminator or a guide, there should be a form of information transmission from the teacher to the students when using flipped classroom model. How the transmission is done is what makes the model either flipped or traditional. However, Wenzler's explanation for flipped classroom model did not emphasise whether learners are guided to acquire the knowledge at home or in school.

In defining the flipped classroom on his online page, Talbert (2017), who adapted his definition from the one given by flippedlearning.org, stated that the flipped learning

is a pedagogical approach in which the first contact with new concepts moves from the group learning space to the individual learning space in the form of structured activity, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter (Talbert, 2017. p.1).

A key thing to be noted from this definition is that new concepts are first introduced to the learner individually before the entire group is engaged. He stresses that the activity should be well-structured to provide direction to students' learning. This makes it different from students who learn in advance on their own without any teacher assigning them a task. With the opposing views Talbert has on the definitions people give to a flipped classroom in their researches, he was careful with his definition and also chose not to include the mode of disseminating information to learners before class (either online or face-to-face).

From the foregoing, it has been established that the definition of the flipped classroom cannot be exhausted. The central idea from the various definitions given is that knowledge that used to be introduced to learners in school is now introduced to learners at home in a flipped classroom model. This situation can be likened to Bloom's taxonomy, which expects lower-order skills to be prerequisite for the development of higher order thinking skills in our quest to solve societal problems.

For this study, flipped classroom model is explained as a teaching approach where the teacher draws learners' attention to knowledge at home through non-physical means and provides the chance for learners to demonstrate the knowledge gained from school to solve practical problems. By saying non-physical means, the researcher is trying to say that the teacher would not be physically present with learners at the time learners would be introduced to the content but may be with them virtually through a pre-recorded video or videos on CDs and DVDs or a website containing videos given to learners to visit for information before meeting as a group. This may be done through the

application of technological tools such as videos, online lectures, voice-over PowerPoint presentations or reading assignments and accompanying online quizzes. It could also be done by making learners observe certain key events in the community in the case of Social Studies, such as making learners observe a child naming ceremony or witnessing a marriage ceremony. The teacher's role in a flipped classroom model transcends beyond being knowledge imparter to a facilitator of learning. The teacher in a flipped classroom helps learners to understand concepts that learners have difficulty in dealing with easily in the classroom or group space.

The environment for the deployment of the flipped classroom is vital. Thus, any teacher employing flipped learning approach should consider the environment in which he or she finds herself or himself. That is, where there is the need to use the internet, teachers may make use of them and where there is the need to use televisions and other technological devices, teachers may also use them. In case a teacher opts to use video lectures as a mode of transmitting knowledge to learners via a flipped classroom approach, Bergmann and Sams (2012) state that videos should be short to let students remain focused for a successful implementation of the flipped learning. They recommend a maximum of 15 minutes per video lecture. Teachers can create their video lectures or refer learners to already-made videos on youtube or any other internet-based video lectures (Gelgoot et al., 2020).

Conceptual Framework

The flipped classroom has been explained as an approach where lower level thinking abilities in the Bloom's taxonomy are carried out in the home of the student with higher level thinking abilities being carried out in the school.

Figure 1 shows the conceptual framework developed by the researcher to illustrate the activities that the learner goes through in a flipped classroom and its corresponding outcome.

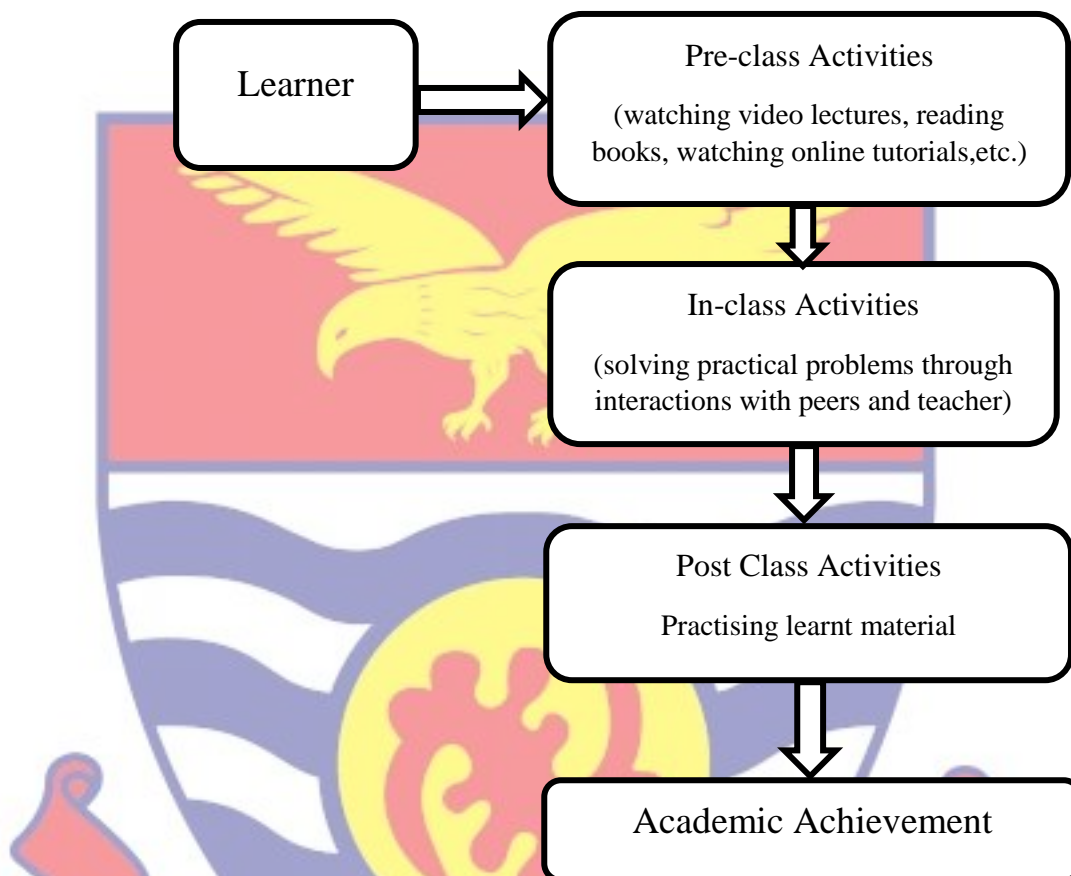


Figure 1: Activities of the learner in a flipped classroom

Figure 1 shows that the learner performs three main activities in the flipped classroom instructional approach. The learner goes through pre-class activities, in-class activities and post class activities. In the pre-class activities, the learner attends to the materials assigned to him/her by the teacher. It could be watching a recorded video, reading a page in a textbook or even watching online tutorials. In the in-class activities stage, the learner solves practical problems in the classroom with peers. Here, the hitherto task assigned to

students as homework is carried out in the classroom. The learner gets the opportunity to ask his/her peers when he/she does not understand issues. The student also gets the opportunity to ask the teacher to explain issues clearly to him or her when he/she has a problem. There is also an open class discussion where learners get to construct their knowledge as they interact with peers. Once the learner is done with the in-class activities, he/she moves to the the last stage titled post class activities. Here, the learner practices and apply what has been learnt in real life. This makes the learner master the skill or knowledge learnt and becomes competent in solving similar problems. The final outcome of these three stages is the learner's improvement in academic achievement. If the learner goes through all the three stages successfully, he or she performs well in academics.

Importance of Flipped Classroom in Teaching

Several benefits of using the flipped classroom in teaching have been reported. At the 2014 International Conference on Economic Management and Trade Cooperation (EMTC), Du, Fu and Wang (2014) categorised the importance of the flipped classroom into teacher advantages and learner advantages. According to them, the importance of the flipped classroom to the learners include but is not limited to learners learning at their pace, engaging concepts with peers, lowering frustration levels and providing a particular benefit to students who struggle to adapt their learning style to the traditional face-to-face teaching method.

Perhaps, the most talked-about benefit of the flipped classroom as an effective instructional strategy is its nature of making learners active and participatory in class (Tanner & Scott, 2015). As learners become exposed to

content outside the class, they become privy to the topics they go to class to discuss. This makes it lively as all learners (both slow and fast) can make their views heard during class discussions. This shifts learners from the practice where only a few learners contribute in class to a more participatory class. While many researchers indicate that learners' active participation in class makes it easier for the teacher to manage the class effectively, others believe effective class management is an independent benefit of the flipped classroom. Ansori and Nafi (2019) indicated that teachers can control the class because of students' collaborative teamwork and active participation.

However, Larcara (2015) has a different view and reports that one of the several benefits of using flipped classroom in teaching is effective class management. As any teacher enters the classroom, the techniques and skills he or she employs in handling issues in the classroom are very important. Managing the classroom is regarded as the technique teachers use to maintain control in the classroom (Kelly, 2019). As an instructional technique, teachers can create a conducive and smooth atmosphere in the classroom where every learner contributes freely without any hindrance. This makes learners understand every concept or subject matter learnt during the instructional period and as well, become independent.

A blog by Rohina (2018) also identifies reducing students' frustration in doing homework as one of the importance of using the flipped classroom in teaching as students learn at home and perform tasks in the classroom. Indeed, some learners become frustrated in their attempts to solve questions that their teachers give as homework. Some end up dumping the homework and copy the ones their friends do when they get to school to avoid being punished by

teachers. Once students are allowed to do the task hitherto given as homework in the school, they get their peers and sometimes, their teacher to explain issues clearly to them. Rohina also indicates that the teacher's ability to use the recorded video lessons at different times also makes it very important in using the flipped classroom in teaching. It must be noted, however, that the flipped classroom cannot be used for all learners but applied to those that it favours. In the same way, the flipped classroom is seen as giving freedom to the teacher to decide on the time to allocate to learners on an activity.

Teachers ability to teach creativity and make students become independent thinkers in a flipped classroom approach is another benefit reported by Ansori and Nafi (2019). As teachers carefully create videos and select materials for learners, their creativity techniques will be transmitted to learners who in turn, add more to solve problems in the classroom. In so doing, learners shift from overdependence on teachers to independent thinkers.

Gengatharan, Rahmat and Razak (2020) indicate that flipped classroom motivates and sustain the interest of learners. This was revealed in a study that examined the benefits that flipped classroom has in teaching Health Education to year six learners in Malaysia. Every human being acting always has a reason to act (motivation). The reason could come from external or internal sources (extrinsic and intrinsic motivation). Some humans have internal motivation to act, while others are motivated by external factors to act. Given that the flipped classroom presents the teacher with an opportunity to prepare or look for the material(s) to give to learners, it is not surprising that it becomes an external factor that motivates learners to learn.

Another importance of using flipped classroom in teaching is its ability to promote a differentiated student learning experience (Torres et al., 2021). They are of the view that learners' introduction to the contents outside the classroom individually and subsequent practical problem-solving activities carried out during class meetings enable them to individually achieve academic excellence. The principle of individual difference draws teachers attention to the fact that every learner is unique and understands issues individually. The flipped classroom provides an opportunity for learners to learn individually outside the classroom and understand issues from a personal perspective before stepping into the classroom.

Pourmand, Pudasaini and Shahandashti (2021) reveal that flipped classroom improve the communication skills of students. Being able to understand what your friend says and your friend understanding what you say is very important in the context of teaching. In teaching and learning, teachers and learners share experiences through verbal means. However, learners who lack effective communication skills struggle to share their experiences in class such that everyone will understand. The traditional teaching models which do not give the learner the time to share experiences during instructional delivery may be attributed to this situation. Pourmand, Pudasaini and Shahandashti indicate that since the flipped classroom offers the opportunity for learners to share their experiences after receiving the content outside the classroom, learners get the opportunity to improve their communication skills.

It has been established that the flipped classroom has several benefits ranging from making the student an active participant in a lesson to improving

the communication skills of the learner. It is then left unto the teacher to use the strategy effectively to ensure that all these benefits are realised.

Challenges of Using the Flipped Classroom in Teaching and Learning

Despite numerous benefits associated with the flipped classroom, it does not do away with some challenges. The number one challenge faced in deploying the flipped classroom is the lack of logistics (Arnold-Garza, 2014). Teachers who may plan to use the flipped classroom approach may have limited resources to carry it out. In instances where teachers have the logistics, students may lack the materials to ensure they do their part successfully. This ranges from the absence of technological tools such as internet access to poor lighting conditions in the case of Aowin. She also indicated that even in the case where learners have the resources required to implement the flipped classroom, they do not devote the time to do the pre-class activities.

Tanner and Scott (2015) agree that students' resistance to using the flipped learning approach due to their acclimatisation to the traditional learning models is one of the challenges faced by teachers who attempt to use the flipped classroom model. Students who have been used to the traditional teaching approaches see the teacher in a flipped classroom as lazy and not ready to perform any activity during face-to-face teaching and learning in the classroom (Rotellar & Cain, 2016). Again, Tanner and Scott (2015) report that learners' unwillingness to join group discussions during the second phase of the flipped classroom implementation is also a major challenge that flipped classroom users encounter most often. Jaster (2017) confirms that some students do not offer their thoughts during discussion periods and that makes it worrying in using the flipped classroom. Meanwhile, teacher's increased workload in creating

materials for learners to use in the flipped classroom and students' unfamiliarity with the flipped classroom were some challenges reported by Lo and Hew (2017) in their critical review of the challenges of the flipped classroom education.

Kenney (2019) identifies six main challenges that users of the flipped classroom face during implementation. Among the challenges are unfamiliar instructional approach, disengagement during pre-class activities, the overwhelming workload for students, lack of out-of-class support and overwhelming work for teachers and unfamiliar instructional techniques for teachers. According to Kenny, the flipped classroom is not familiar to a lot of people. In effect, they struggle to embrace it from the beginning despite its numerous benefits reported in the literature. He also stressed the overwhelming workload on the side of teachers and students as being part of the many challenges of the flipped classroom. Since teachers had to prepare the materials in a way that will suit their learners, they are left with the burden of going the extra mile as compared to the traditional method of teaching. On the other hand, a lot of students complain that adding the flipped classroom to the numerous tasks they perform at home makes it difficult for them to embrace the flipped classroom.

It has been established from the literature that the flipped classroom, though has many advantages cannot go without few setbacks. Few of these setbacks have been outlined.

Technologies Used in the Flipped Classroom

As a teaching approach, the Flipped classroom is widely known for its incorporation of technology. Amid technological proliferation, being able to

identify and use a particular technology in the flipped classroom is of utmost concern. Several technological means could be used to carry out the flipped classroom but researchers warn that a twist in its (technology) usage may produce unwanted results (Akuffo et al., 2019). Perhaps the most widely used technology in the flipped classroom is the use of videos (Basal, 2015). With videos, teachers carefully select screen recorders and record their lessons and distribute those recordings to their learners either via a network or CD/DVD. Learners then watch the video material and try the quizzes that are embedded in the videos before they go to class for discussion. The benefits of videos are that it allows learners to pause, rewind and be clear on a particular concept before proceeding. It also helps absentees to catch up with lessons they miss(ed).

Meanwhile, social media applications that have surfaced in recent times and are widely used by learners for day-to-day communications with their peers cannot be left out of the available means that could employed to enrol learners into the flipped classroom instructional model. Ansari and Khan (2020) state that when social media is used efficiently, it leads to collaborative learning and the transfer of interpersonal skills and experiences from person to person. Using social media to learn provides direct communication between teachers and students and their parents (West, 2021). She also went ahead to reveal that social media provides e-learning opportunities to learners. It is common to see learners these days belonging to one or more social media groups, the common in Aowin being Whatsapp. Learners can be exposed to content through these social media groups by their teachers.

Another technology used in the flipped classroom is the use of books and websites. Jensen, Holt, Sowards, Ogden and West (2018) support this claim

by indicating that textbooks are the most frequently used medium for providing straightforward content to learners. Here, titles of books and their corresponding authors and page numbers are made known to the learners and learners are expected to read the assigned portion before attending face-to-face meetings (Jensen et al., 2018). In the case of websites, instructors provide learners with the website that contains the information they require learners to acquire outside the classroom. Learners then enter the classroom with the information at hand where debates or discussions are held based on the information they read.

The use of online live lectures cannot be left out of the technologies that flipped classroom instructors use to engage their learners before face-to-face meetings. This should not be confused with the recorded videos hosted online for learners to watch. With this technology, learners log in to online live lecture applications such as zoom to watch and listen to the instructor as he delivers knowledge to them. The Berkeley Center for Teaching and Learning (2021) prefers to label this type of technology as remote instruction and emphasizes the need to break out sessions for students to have peer discussions. The online live lecture is similar to teleconferencing except that it is done purely for learning purposes. While some may argue that this is not different from the traditional lecture, it must be emphasised that the provision of opportunity for students to record the live sessions and watch later for clarification makes it entirely different from the traditional method of teaching. This technology was employed by most of the universities and state institutions like the Ghana Statistical Service in 2021 and during the Covid-19 lockdown in 2020 and would be practically possible to be used for Junior High School learners in studying Social Studies.

In essence, the flipped classroom can employ several technologies in its implementation. Among the technologies that could be employed include recorded online videos hosted online, the use of social media, instructing through books and websites, and using online live lectures, recording audios and videos on CDs and DVDs. These technologies when used diligently, could produce success in the academic achievements of learners. In this research, the researcher limited himself to the use of recorded videos for students to perform the out of class activities and using google forms for them to do the practice activities.

How to use the Flipped Classroom for Effective Teaching and Learning

Literature suggests that there is no one way to carry out the flipped classroom instruction. However, all authors of the flipped classroom literature agree that the most important element of bringing the hitherto homework in school should not be missed out (Joksimović et al., 2019). The following five components were suggested by Bergmann and Sams (2012 as cited in Santos & Serpa, 2020):

1. Setting clear learning targets.
2. Determining the specific objectives that best meet the goals and how to apply direct and clear instructions to better capture them.
3. Ensuring that learners have access to the materials, being it videos or reading assignments.
4. Integrating in-class learning activities.

5. Creating several types of assessment for the student to demonstrate his/her mastery of each learning objective in each particular unit of study.

Just like in every activity, teaching does not go unplanned. Every teacher has goals to achieve at the end of a specified duration. These goals are achieved through setting specific objectives. The specific objectives are thus, achieved through the stimulus the teacher presents to learners. Learners, therefore, engage in series of activities to ensure that they acquire or achieve the teacher's intended targets. The teacher finds out whether learners have achieved those targets through several assessment tasks. These tasks help the teacher to evaluate the attainment of the learners.

To support the above guidelines, three main stages or activities have been identified by Lo and Hew (2017) in their review of the flipped classroom activities. They identified these three main stages as pre-class activities, in-class activities and after-class activities. According to their review, the pre-class activities that teachers should ensure their learners engage in includes reading text materials and taking notes from them, doing online exercises and discussions and watching instructional videos. In the classroom, teachers should engage the learners in individual practices and quizzes, perform a brief overview and small group activities, have a short lecture and make students present solutions to problems posed to them. In the after-class activities, the learner should be made to do self-evaluation and reflect on what they have learnt.

Theoretical Framework

The flipped classroom is known for its child-centred nature and has been greatly linked to several theories that support its existence. Several theories such as the cognitive load theory and self-determination theory, have been recommended by researchers (Abeysekera & Dawson, 2015) to be used as the framework for designing a flipped classroom. However, this study utilizes behaviourism, cognitivism, and constructivism as its bases for the flipped classroom.

Behaviourism

The academic performance likely to be exhibited by learners in a flipped classroom can be closely linked to the theories of behaviourism. Classical conditioning by Pavlov which is perhaps, one of the most talked-about theories of learning, posits that learning occurs through an association with an external stimulus. In his experiment, Pavlov obtained a conditioned response from the dog through the constant pairing of food with the sound of a bell. The saliva generated by the dog through the association of the sound of the bell with the food in the experiment indicates that learning occurred. Kelly (2012) asserts that the learning process from a behaviourist point of view depends on changes in behaviour that can be observed. Thus, in behaviourism, an environmental stimulus should be presented to the learner to generate a response from the learner.

Similarly, in the flipped classroom model, the teacher consciously prepares some form of material that introduces the learner to the content at home before he or she goes to school. Learners will then respond to the video by demonstrating an understanding or difficulty in understanding the content that

has been introduced to them in the video. When learners understand the content clearly, Moormann et al. (2015) say they will perform their in-class activities without difficulty. Otherwise, they will have difficulty in performing the in-class tasks and the teacher would have to step in to assist. These manifestations would then be observed by the teacher so that future decisions could be made.

While the video served as an external stimulus generating a learning response from learners, there is no guarantee that learners in the flipped classroom would attend to the video or materials that may be given by their teacher. With this in mind, Thorndike and Skinner of the operant conditioning perspective make us aware that learners who aspire to learn will be looking for materials that will facilitate their learning just as the cat and rat in Thorndike and Skinner's experiment respectively, looked for the food. The basic learning assumption here is that the learner would voluntarily watch the video. This can be made possible if the stimulus is presented in a way too stimulating for the learners to react to before lessons.

Constructivism

Constructivism is the view that people individually gain knowledge and make meaning out of their experiences and that makes them establish the relationship between concretion and abstraction (Elliott et al., 2000 as cited in McLeod, 2019). Constructivists hold the view that we create our knowledge individually depending on the experiences we have had. Therefore, our perception of the world should be looked at from the individual point of view and not from the general point of view. This is confirmed in the Piagetian theory of cognitive development where learners answered questions differently beyond logical reasoning.

According to Piaget as cited in McCray (2007), learners construct their knowledge based on their interactions with the environment suggesting the role of the setting as a significant influence of students' learning. In a typical flipped classroom, learners interact with the materials first outside the classroom and deduce their understanding through their interaction with those materials before they go to class. Mostly, these materials are technological devices common to learners which help them to create their knowledge independently.

Beyond cognitive constructivism, Lev Vygotsky, the creator of social constructivism, confirms that learners come out with new knowledge based on their interactions with the social environment. In social constructivism, learners acquire knowledge as they interact with their peers, mentors, teachers and adults (Kurt, 2020). As learners interact more with people, they build their knowledge level and gain more insights into issues. Consequently, Vygotsky recommends the use of activities that provide opportunities for learners to interact with the social environment. This is exactly what the flipped classroom model does. The flipped classroom presents learners with the opportunity to view content at home and solve problems collaboratively at school. Learners get the opportunity to interact with their teachers and friends in school through their engagement in groups and whole-class discussions. In some instances, learners get the opportunity to interact with their parents and siblings at home during the time they watch or listen to the pre-recorded lecture and obtain more understanding of contents before they move to the group space for discussions.

Bloom's Taxonomy

As a teacher, it is common to hear learners state that teachers provide them with less complex examples during face-to-face lessons and assign

difficult tasks to them to do at home. This is probably because teachers expect learners to acquire the fundamentals and apply the knowledge and skills gained to solve complex issues in society. Students do complain because when they face a challenge in working on those complex tasks mostly at home, they do not get someone to share their challenges with. In 1956, Benjamin Bloom, alongside friends, came out with a framework for classifying educational objectives. This framework became known as Bloom's Taxonomy. They classified educational objectives based on those requiring lower-order thinking and those requiring higher-order thinking.

According to Armstrong (2020), the categories of educational objectives put forward by Bloom and his team are; knowledge, comprehension, application, analysis, synthesis, and evaluation. These classifications were later revised by Anderson and Krathwohl (2001) as remembering, understanding, applying, analyzing, evaluating, and creating. Although revised, it is important that for teachers to understand that knowledge and understanding in the original classification are seen as lower-order thinking abilities while application, analysis, synthesis, and evaluation are seen as higher-order thinking processes. Armstrong went further to explain that aside knowledge, all others in the classifications are skills and abilities. This suggests that irrespective of the skills one may possess, we still need knowledge before we can embark on anything.

In school, learners may have some skills but often struggle to put these skills into use due to a lack of basic knowledge. Teachers may think learners are not ready to apply their skills and tend to move on by lecturing them. However, the flipped classroom emphasizes the importance of knowledge in Bloom's taxonomy by ensuring that learners obtain knowledge at home and

apply the knowledge to solve real-life problems at school. This implies that the flipped classroom helps to eliminate the complaints students make in terms of where and when they solve complex problems. In the flipped classroom, learners get to solve complex tasks in class so that they can contact their friends or teachers when they face challenges. In a research article by Woosey and Miles (2019), it is confirmed that students in the flipped classroom asked challenging and independent scientific questions, an indication that the flipped classroom approach helps learners to solve challenging issues in society thereby responding to the needs of the Bloom's taxonomy.

Empirical Review

The use of the flipped classroom since its inception by Bergmann and Sams (2012), has generated a lot of researches to ascertain its influence or effect on the academic achievement of learners subjected to this approach. Several outcomes have been produced in these researches. This section examines the various shreds of evidence on the influences or effects of the flipped classroom on the academic performance of learners.

Influence of Flipped Classroom on Academic Achievements

Researches involving the flipped classroom and academic achievements seem to be minimal. Few pieces of research looking into the influences the flipped classroom model has on the learners' academic achievements have produced positive outcomes regarding academic achievements although a few others have produced contradictory findings. For instance, a study that was conducted to examine the effect of the flipped classroom on the academic achievement of students in a high school Mathematics course yielded a negative result against the flipped classroom (Saunders, 2014). The study was purposed

to determine whether there was a statistical difference in student academic achievement in two high school mathematics classrooms once the flipped classroom concept was implemented. Obtaining independent t-test results of $p = .239$, the researcher concluded that there was no significant difference between the mean scores of students exposed to the flipped classroom and the mean scores of students taught using the traditional methods of teaching and learning (Saunders, 2014).

Meanwhile, Smallhorn (2017) had also identified that there is no statistically significant difference between the academic performance of students taught using flipped classroom models and the academic performance of students taught using active learning strategies in the traditional methods of teaching with the statistics for two different year groups reported as $M = 58.52$, $SD = 19.96$; $M = 58.25$, $SD = 21.45$; $p = .864$; $t(46) = .172$; $d = .013$. However, Smallhorn asserts that the flipped classroom rather engages students through spending time on campus and establishing a positive relationship with peers and educators.

Similarly, in a quasi-experimental study where pretest and posttest items were used, Cabı (2018) found out that there was no statistically significant difference in the academic performances of learners who were taught using the flipped classroom and those taught using non-flipped methods of teaching ($F(1,57) = 0.926$, $p < 0.05$, $\eta^2 = 0.016$). Despite this finding, her research revealed that students were satisfied going to class prepared and no need to do assignments at home were a few of the benefits of the flipped classroom model.

Several other studies, on the other hand, have reported contradictory findings by stating more positive effects of the flipped classroom over the

negative effects. In a study aimed at analysing the trends and contents of flipped classroom research using 20 research article reports published on the flipped learning classroom from 2013–2015, Zainuddin and Halili (2016) found out that the flipped classroom has a significant impact on students' learning. Through their content analysis, they found out that the flipped classroom benefited students academically and motivated students, thus, making them study at their own pace while becoming confident during their encounter with the teacher in the classroom. The numerous advantages they identified from their review made them suggest that the flipped classroom model be seen as a modern-day model that should be incorporated in the teaching-learning of different subjects.

Along the same paradigm, a study involving science students (sophomore) at the University of Extremadura also found out that there was a 10% increase in students who took the course for the first time and passed by being taught through the flipped classroom model while higher final year grades were also reported (González-Gómez et al., 2016).

Albalawi (2018) in his study on the effects of the flipped classroom model on Calculus students' academic achievements at Tabuk University, also found out that using the flipped classroom in teaching was effective. In the study, he found out a statistically significant difference between the treatment group and the control group after conducting an achievement test in Calculus. Using ANCOVA, he inferred that the mean score of the treatment group (19.87) was higher than the mean score of the control group (14.96). The researcher thus, recommended the use of the flipped classroom model to enhance students' learning especially, the at-risk students.

Karadeniz (2018) in a pretest-posttest experimental study using undergraduates students of the University of Anadolu found out that there was a massive improvement in the academic achievement of students who were taught using the flipped classroom model. Without using a control group, Karadeniz conducted a pretest for the undergraduate students using 20 items and obtained their mean score. After taking learners through 11 weeks of the flipped classroom model, a posttest also consisting of 20 items was also given to the students and the mean score was obtained. A t-test was then conducted to ascertain the level of differences that existed in the performances. It was revealed that there was a statistically significant difference in favour of the flipped classroom (pre-test mean = 3.88 and post-test mean = 11.69). Having used only one group, it can be deduced that his study may be influenced by several extraneous variables such as learners readiness to do the out of class activity, teachers sometimes shifting to the traditional system when not getting the results and many others. However, the study called for more usage of the flipped classroom by teachers and incoming teachers (Elian & Hamaidi, 2018).

In a related experimental study, Sirakaya and Ozdemir (2018) found a significant difference in the posttest scores of the experimental group and the control group. This was determined after an independent sample t-test was run to ascertain the differences in means of both the treatment group (those subjected to the flipped classroom) and the control group (those subjected to the classical blended learning method) producing a result of $[t_{(64)} = 3.47, p < 0.05]$. They attributed the differences in performance to the materials used during different lessons and the learning environment in which the flipped classroom is used. This is an indication that the type of materials and the learning

environment have a great role to play if the flipped classroom model intends to contribute greatly to the academic achievements of learners. Therefore, for one to use the flipped classroom to improve the academic achievement of learners, the teacher should consider the environment and the resources to be used.

Action research carried out by Quansah et al. (2018) on the use of the flipped classroom approach to enhance the understanding of JHS 1 students on the topic of density in Integrated Science, showed that the flipped classroom was effective in improving the academic performance of students. However, the population was not clearly defined and the use of only frequency tables and bar graphs to analyse the results did not indicate the extent to which differences existed in the performance of students in both the pretest and post-test of the students.

Additionally, Blázquez et al. (2019) in their research on the flipped classroom's impact on the academic performance of students pursuing a degree in Social Work at the University of Zaragoza, found out that students who were taught using the flipped classroom-based learning achieved higher academic performance, producing a mean of 6.56 with a standard deviation of 1.58 ($n = 60$) in comparison to those engaged in the traditional lecture-based methodology who obtained a mean score of 5.43 with a standard deviation of 1.97 ($n = 50$). Qualitatively, they indicated that 6.9% of students taught using the flipped classroom learning model obtained outstanding performance as against 2.3% of those taught using the lecture-based methodology. This provides a clear indication that the flipped classroom produces higher academic achievements in comparison to the traditional teaching methodology.

In another study involving undergraduate medical students offering a pharmacology course, Angadi et al. (2019) agreed on earlier findings that the flipped classroom methodology produces better academic achievements as compared to the traditional teaching methods. In the study, the mean scores of both the experimental and control group in pre-test and post-tests were compared using an independent sample t-test. The tests results revealed that there was a statistically significant difference between the mean scores of the treatment group and the experimental group ($p < 0.0001$). Proceeding to obtain qualitative data from students, it was found out that 94% of the students felt that the flipped classroom model enabled them to achieve stated learning objectives while 96% of the respondents indicated that the interactive, applied in-class activities during the flipped class enhanced their learning greatly. This made the students call for the frequent use of the flipped classroom in future lessons. In the same way, Låg and Sæle (2019) in their systematic review and meta-analysis of studies involving the use of the flipped classroom to improve students' learning and satisfaction, also indicated that the flipped classroom has a slight advantage in terms of students' academic achievement as compared to the traditional lecture method. What the researchers were not able to find out is the specific mechanisms adopted by users of the flipped classroom that contributed to the academic performance of learners.

According to Talan and Gulsecen (2019), the flipped classroom is more effective at increasing the academic achievements of students as compared with blended learning and face-to-face teaching methodology. This was found out after running a paired sample t-test for three groups offering a Computer-I course. The pretest and posttest mean scores were compared where the t-test

revealed statistically significant differences in the scores [$t_{\text{experiment-I}}(39) = -17.851$, $t_{\text{experiment-II}}(38) = -14.846$, $t_{\text{control}}(39) = -11.364$; $p < .05$]. Despite the significant difference identified in favour of the group that was taught using the flipped classroom, Talan and Gulsecen suggest that different instructional methods such as mobile learning, cooperative learning, problem-based learning as well as project-based learning could be blended with the flipped classroom to promote effective learning.

Bursa and Cengelci (2020) also conducted research to identify the effects of the flipped classroom practices on the academic achievement of students in a Social Studies course. Using an embedded experimental research design, they revealed that students exposed to the flipped classroom (experimental group) obtained a higher mean than students that were taught using the traditional teaching methods (control group). The post-test mean score for the experimental group was found out to be 25.39 while the post-test mean score for the control group was 20.82. Moving further to identify the effect size using Cohen's d value, they were able to identify that the flipped classroom alone contributed 45% of the students' academic achievement as against other factors. This made them suggest that the flipped classroom be used in teaching Social Studies to help learners to achieve higher in terms of academic performance. They also suggested that a flipped classroom guide be prepared for teachers who would like to adopt the approach while in-service training is organised to help teachers to improve upon their technological competencies to use the flipped classroom effectively.

The review has revealed that the flipped classroom leads to greater academic achievements if used appropriately and in the right context. It has been

established that one needs to consider the environment in which he or she finds himself and apply the model accordingly. Studies reviewed have called for a lot of in-service training on the use of technological tools that could be used to make the flipped classroom effective to use to promote students' academic achievement.

Perceptions of Students on the Use of the Flipped Classroom in Learning

The extent to which people embrace a particular idea or new thing depends to a large extent on the perceptions they have of that new thing or idea. This is confirmed by the Technology Acceptance Model (TAM). To determine whether students would wholly embrace the flipped classroom, the researcher thought it wise to look into studies that involved the perceptions of students who have been introduced to the flipped classroom teaching and learning model. It was found out from electronic database searches that the majority of studies examining the impact of the flipped classroom methodology on students' academic achievements also examined the perception of students of the model.

According to Rotellar and Cain (2016), students who are used to the traditional didactic lectures may initially oppose the concept of the flipped classroom. This is because these learners will have to be responsible for their learning. This was revealed in their study where they sought to find out the perceptions of students on the use of the flipped classroom in teaching. However, a study that examined the perceptions and emotions of students toward learning in a flipped General Science classroom reported a positive perceptions of students on the flipped classroom concept. Conducted by González-Gómez et al. (2016), the research used a questionnaire to solicit responses from 65 respondents (sophomore) who were undertaking a bachelor's

degree in Primary Education at the University of Extremadura. After descriptive analysis, the researchers reported that respondents found the model to be more interactive and hoped all subjects made use of the flipped classroom model. The research reported that over 80% of the respondents said the course was a treasured learning experience with over 91% rooting for other subjects to move along the same paradigm.

However, in a study of student and instructor's perceptions of a flipped College Algebra classroom, it was revealed that learners had mixed perceptions on the use of the flipped classroom, especially, where lessons are presented online (Jaster, 2017). While most of the students indicated in their written assignments that they did not like the methodology because it did not allow them to ask questions during the time they watched the video, others also indicated that the ideas they obtained through watching the video helped them to solve practical problems in the classroom (Jaster, 2017). This is an indication that learners may lack the basic assumptions of what the flipped classroom intends to do. In a flipped classroom, learners are to watch the video or read the material given and note down their difficulties and bring them to class for assistance by peers or the teacher. If students are not able to do this, then, there is a tendency that the user of the flipped classroom did not explain the concept well enough to learners.

Contrariwise, a survey involving undergraduate Criminology students of the Southern Oregon University revealed that 40% ($N = 32$) of the students said the flipped classroom helped them to solve complex real-world problems (Burke & Fedorek, 2017). Additionally, 60% of the students described the flipped classroom model (FCM) as helping to become informed and active

citizens while 43% also indicated that they learn effectively on their own when the FCM is used. This shows that the flipped classroom model if applied appropriately, makes students active and reflective citizens as envisioned by Social Studies. This helps them to solve problems in their society.

After teaching Science students through the use of the flipped classroom model at the end of the 2016 academic year, Griffiths (2017) opted to survey to ascertain the perception of students on the use of the flipped learning model. The survey was answered by 54 students in year nine. From the survey, it was reported that 88.9% of the students like being taught through the flipped classroom model. This is because they see the flipped classroom as providing enough opportunity to perform more experiments, work at their own pace and learn collaboratively. The survey also showed that students liked the flipped classroom because it enables them to catch up on lessons that they have missed. In terms of videos, the students reported that they like videos prepared by their teacher and videos that involve teacher writing not only talking. With this perception, teachers who intend to use the flipped classroom need to try their possible best to use videos that involve teacher writing.

Furthermore, Cabi (2018) reported a positive student perception towards the flipped classroom methodology. In examining the effects of the flipped classroom on students' academic achievements, Cabi (2018) also ascertained the students' frame of reference on the flipped classroom model. While an academic achievement test was conducted for students to determine the impact the flipped classroom had on students' academic achievement, a focused group interview was conducted to obtain the opinions of learners on the flipped classroom model. After descriptive analysis, it was found out that students liked

the flipped classroom because it prepared them before coming to class. Some of the students also indicated their likeness of the model because it allowed them to perform a difficult task in class with their friends which made learning more enjoyable to them.

Students see the flipped classroom model (FCM) as a methodology that provides learners with a comfortable classroom environment, flexibility in learning and increased interaction among students and teachers (Akuffo et al., 2019). This was revealed through a study looking into the flipped learning as an alternative learning pathway for effective and efficient Technical and Vocational Education and Training at the Koforidua Technical University. The study used interviews to obtain the perception of students and teachers on the use of the flipped learning model and there were positive results produced for which a comfortable classroom environment yielded a mean of 4.8 and a standard deviation of 0.415. In the same study, students and teachers reported that they have flexibility in learning under the flipped learning model ($mean = 4.74, SD = 0.657$). This explains that students have a positive perception of the flipped learning model because it offers them the opportunity to learn at their own pace and time.

In a cross-sectional survey on the perceptions of undergraduate students in the utilization of the flipped classroom for learning in South-West Nigeria, Onojah et al. (2019) found out that students had a positive perceptions of the flipped classroom. The students indicated in their study that the flipped classroom improve their learning performance makes learning productive, saves time, increases their reasoning ability, increases their participation in teaching and learning, promotes peer and teacher interaction, arouses and sustains their

interest in the subject and also exposes them to relevant educational media. This made the researchers recommend the use of the flipped learning model in teaching and learning.

All these studies have indicated that the students who have been subjected to the flipped classroom treatment have a positive perception of the flipped classroom. From studies reviewed, it could be seen that students' interaction with peers and teachers, collaboration and co-operation in solving problems, ease of access to missed materials and lessons, students' participation in lessons, flexibility in learning, conducive learning environment, having enough knowledge before going to class, just to mention but a few, are the reasons for students' positive perception of the flipped classroom. It is believed that Social Studies students in Junior High schools in the Aowin Municipality would express similar or different perceptions when subjected to the flipped classroom treatment.

Challenges Learners Face in Using the Flipped Classroom in Learning

Learners face a wide range of challenges in using the flipped classroom to learn as indicated earlier in this chapter. This section discusses some of the challenges found by studies where the flipped classroom was used by learners. In a study that examined trainee teachers' challenges and attitudes towards the flipped classroom, it was revealed that internet connectivity, problems associated with downloading videos, power outages, incompatibility with phones and large video sizes were the main challenges that learners faced in using the flipped classroom (Adedaja, 2016). The study that employed focus group discussion as its data collection instrument revealed that 60% of respondents stated that they had issues with internet accessibility and

connectivity. Twenty percent of the participants in the study indicated difficulty in downloading videos while 10% attributed their biggest challenge to incessant power outages. The remaining 10% of the participants in the study were torn between phone incompatibility issues and large videos sizes. While 5% of the remaining 10% said they had issues trying to play the videos on their phones, the other 5% indicated that the videos were too large for them to watch. It could be seen from the study that a lot of the challenges faced by the students in using the flipped classroom were beyond the control of the researcher.

In another study that sought to find the impact of the flipped classroom on students' academic achievement, it was revealed through a focus group discussion that learners had challenges with the flipped classroom in terms of motivation, content and learning (Cabi, 2018). It was revealed through the focus group discussion that three (3) participants indicated they made no effort to study the materials that they were to study out of class, another three (3) students indicated that they were burned out while two (2) participants said the activities were boring and unnecessary. In terms of the content challenges, three (3) participants of the focus group discussion indicated that the topics were too difficult and that posed a challenge to them. Five (5) participants stated that they had not enough resources to complete the learning activities outside the class while one person indicated that there were too many terms. Three (3) students said they did not have time to perform the out of class activity due to their schedules while one person said he had difficulty in relating what he was learning to his field of study. This is in contradiction with González-Gómez et al. (2016) who found out that learners had enough time to watch videos to

understand concepts clearly before going to class. Six (6) students, however, said they did not have any challenge with the flipped classroom.

The above review has shown that though there are a lot of advantages in using the flipped classroom in learning, students face a lot of challenges in trying to learn through the flipped classroom.

The Views of Teachers in Using the Flipped Classroom in Teaching

The extent to which a particular item or idea will be embraced depends largely on the user's view or perceptions of that particular item. In that regard, it was prudent for the researcher to find out the views teachers hold on the use of the flipped classroom. This section discusses some of the findings from researches that examined teachers' views on the flipped classroom and its influences on academic performance.

In an article that reported on the views of lecturers on the use of the flipped classroom in teaching students at rural universities in Australia, all five participants (100%) in the interview indicated a positive view on the use of the flipped classroom. Among the many advantages, they viewed the flipped classroom as an approach that makes the learning situation more flexible for learners, focuses on problem-solving than merely providing theoretical knowledge, increases the level of understanding, provides adequate time for classroom activities and offers better opportunities for students to be actively engaged in lessons (Hajhashemi, Caltabiano & Anderson, 2016).

Another study that looked into the opinions of Social Studies teachers on the use of the flipped classroom through semi-structured interviews revealed that the opportunity the flipped classroom model provides for absentee learners to catch up with their peers is one of the numerous benefits that the flipped

classroom adds to the teaching and learning situation (Erdogan & Akbaba, 2018). The study also revealed that the heterogeneous nature of Social Studies classrooms makes it difficult for the teacher to be able to meet the needs of all individuals when the traditional method of teaching is used. However, the flipped classroom provides every learner with the chance to individualise the learning situation and increase their understanding of concepts.

As the flipped classroom research gains grounds, a lot of researchers focus on the preservice teachers' view (Coyne et al., 2018; van Wyk, 2018). This is apparently because these students will be teachers sooner than later and need to be introduced to the concepts while they are at school. To find out whether new teachers under training will embrace the flipped classroom teaching model in Social Studies, Coyne et al. (2018) solicited the views of the to be teachers in their research to ascertain the effectiveness of the flipped classroom approach on preservice Social Studies teachers. Their findings showed that 75% expressed the view that they will use the flipped classroom in their classroom due to its benefits. Seventy percent of the to be teachers indicated that they will use the flipped classroom because it personalises learning.

In the same way, a study conducted to look into teachers' perception of the flipped classroom in Mathematics instruction revealed that teachers see the flipped classroom as an instructional approach that trains learners critical thinking and also make students learn actively (Rachmawati et al., 2019). The study, which utilised both online and face-to-face interviews, revealed that all teachers (100%) view the flipped classroom as promoting critical thinking skills because learners had information before the class discussions.

Summary

The purpose of the study was to find out the influence of the flipped classroom model on the academic performance of JHS Social Studies learners in the Aowin Municipality. Sequel to this, the literature on the flipped classroom and its bearings to academic performances were reviewed. The meaning of the flipped classroom was explored. It was found out that the basic assumption in the definition of the flipped classroom is where (the place) active learning activities take place. Varied literature revealed that in the flipped classroom, passive learning takes place at home while active learning takes place in the classroom. The bottom line was drawn to the effect that the flipped classroom model deals with a situation where learners are introduced to concepts outside the classroom while they become engaged in solving real-life problems in the classroom.

The importance of the flipped classroom was also reviewed where numerous researchers talked about the various importance the flipped classroom gives to both learners and teachers. Among the benefits include; students being engaged actively in the teaching and learning environment, students learning at their own pace, benefiting the absent students, providing the opportunity for the teacher to reuse videos created, promoting critical thinking and collaboration among learners, and many other importance that were reviewed. Despite the various importance, it was revealed through extensive exploration of related write-ups that the flipped classroom is fraught with challenges. The challenges range from a lack of resources to students' unwillingness to access materials outside the classroom.

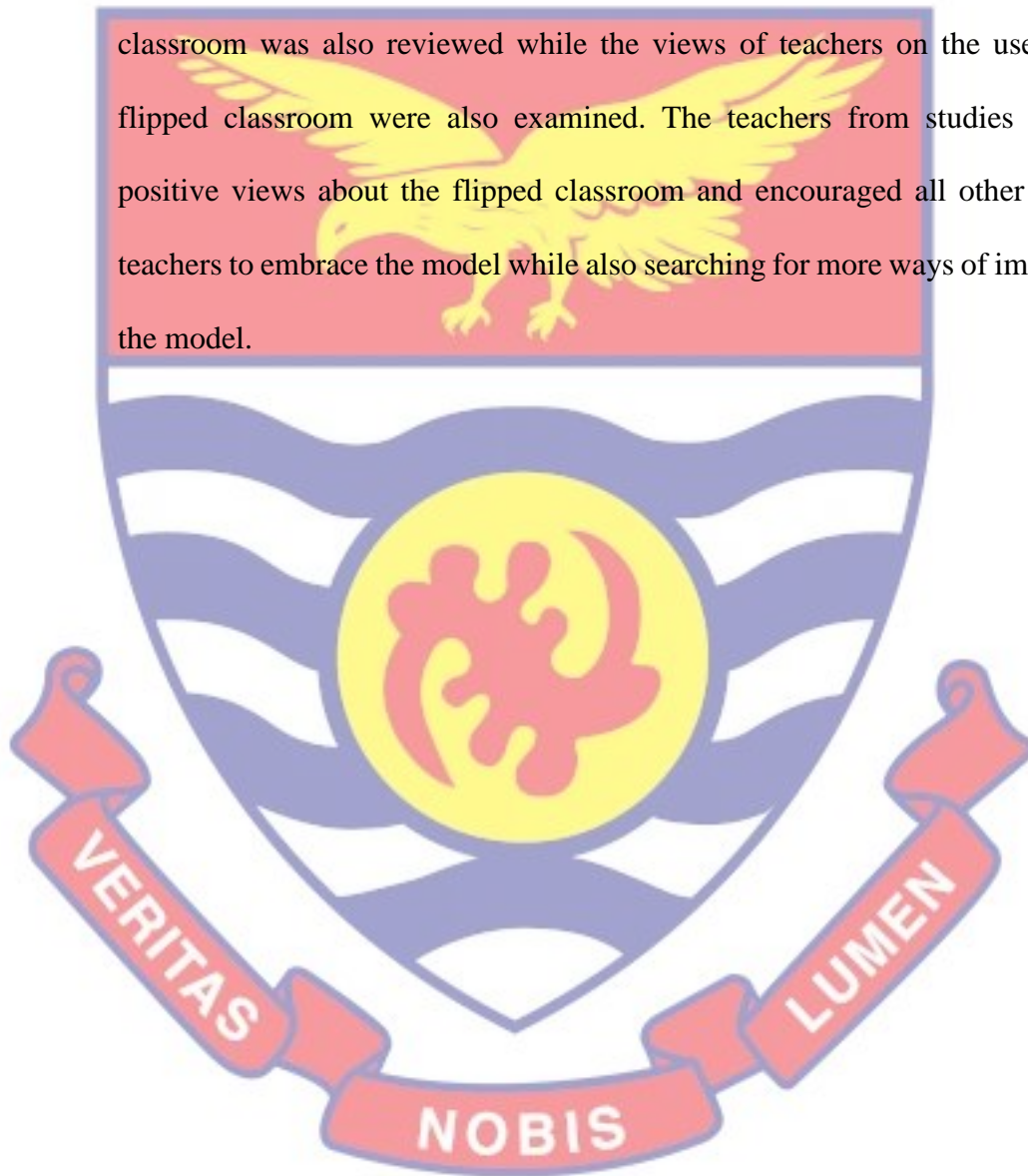
Technologies that could be employed in the use of the flipped classroom was also explored in the literature review and was found out that online videos, videos on DVDs, pen drives, textbooks, websites, live online lecture, social media and many more avenues could be adopted and adapted to ensure effective use of the flipped classroom. The mode through which the flipped classroom is used was also found out. It was seen that just like every activity, flipping a classroom demands the teacher to plan before and embed quizzes and other evaluation tools to find out about the success of the activity.

Theories governing the use of the flipped classroom were also examined where it was found out that behaviourism and constructivism all play a significant role in the use of the flipped classroom. Bloom's taxonomy was also seen to play a significant role in the use of the flipped classroom. Bloom's taxonomy expects learners to acquire lower-level thinking abilities before acquiring higher-level abilities. It was seen that the flipped classroom exposes learners to knowledge and understanding at home and apply that knowledge at school to solve real-world problems. This is an indication of the use of Bloom's taxonomy in the flipped classroom.

Several shreds of empirical evidence were obtained on the impact the flipped classroom has on students' academic achievement. It was seen that many studies indicated that the flipped classroom produces significant differences in the mean scores of students compared to the traditional teaching methods and online learning. Few studies, however, reported little or no difference between the academic achievement of learners exposed to the flipped classroom treatment and learners taught using active learning strategies in the traditional methods of teaching. On the perceptions of learners, it was found out

that most learners that have been subjected to the flipped classroom treatment have a positive perception of the model. Most of the learners from studies reviewed indicated that the flipped classroom model makes learning flexible and helps them to participate actively in lessons, thus, increasing their performances eventually. Challenges learners face in using the flipped

classroom was also reviewed while the views of teachers on the use of the flipped classroom were also examined. The teachers from studies showed positive views about the flipped classroom and encouraged all other subject teachers to embrace the model while also searching for more ways of improving the model.



CHAPTER THREE

RESEARCH METHODS

This chapter addressed the research methods employed by the researcher in finding out the influences of the flipped classroom model on Social Studies learners in JHS in the Aowin Municipality. The research design, study area, population, sample and sampling procedure, data collection instruments, data collection procedures, and data analyses procedure were addressed in this chapter. After all the above-stated sub-headings, a summary of the chapter was also provided.

Research Design

A research design is the guidelines or plans that direct every research. It is an outline that shows the researcher what to do and how to answer research questions or test hypotheses. Creswell (2014) acknowledges that to make decisions concerning research questions and hypotheses, there is the need to put up plans and procedures to collect and analyse data. These plans and procedures are what he refers to as research design. According to Bhasin (2019), a research design is the gradual steps a researcher takes to perform a scientific study. To him, these steps include the techniques and methods that help the researcher to complete the research work competently. In the same way, McCombes (2020) adds that “a research design is a framework for planning your research and answering your research questions.” The research design guides the researcher to decide on the type of data to be collected, the participants and their location, the most appropriate variables and the methods of data analyses. The research

design should be neutral, reliable, valid and generalisable (Bhasin, 2019). He stresses the importance of gaining trust in the analysed information by preventing or minimising biases as possible as one can in the collection of data.

For this study, the researcher opted to use the quasi-experimental research design. A quasi-experimental study is a study where subjects are conveniently selected and assigned to groups to determine the effectiveness of a treatment given to one of the groups (Maciejewski, 2020). A quasi-experimental study is just like a true experiment with randomisation serving as the distinctive feature between the two. The “quasi-experimental design aims to establish a cause-and-effect relationship between an independent and dependent variable” (Thomas, 2021). The quasi-experimental design allows a researcher to experiment in a situation where a true experiment cannot be undertaken. The quasi-experimental research design helps a researcher to control any other confounding variable, thus, yielding high internal validity as compared to other non-experimental research designs (Thomas, 2021). A quasi-experimental design has greater generalisability of results and addresses several research questions that a researcher may not be able to use the true experiment to address due to its costive nature (Maciejewski, 2020).

Despite the several benefits of the quasi-experimental research design, it cannot be used without taking note of the few weaknesses that it comes with. A researcher using the quasi-experimental research design should be aware of challenges such as low internal validity in comparison to true experimental research (Thomas, 2021).

Quasi-experiment could be done with a treatment given to only one group or done with a comparator group where one group receives the treatment

and the other group is compared to identify the effectiveness of the group that received the treatment. This study employed the use of the non-equivalent group quasi-experimental design because it allowed the researcher to obtain data from two different but identical groups. It also saved the researcher's time and cost in collecting data due to the non-randomisation of subjects.

Study Area

As specified by Maciejewski (2020), one of the criteria for choosing a quasi-experimental design is geography. Sequel to that assertion, the research took place in the Aowin geopolitical demarcation of the Western North Region. The exact location where the study took place was Enchi township. The Enchi College of Education Demonstration JHS and the Enchi Methodist JHS were the schools where the research took place.

Population

The population of a research study refers to the total number of people, objects, institutions, and many others that have the same features that a researcher wants to investigate (Amedahe & Gyimah, 2019). This study's population comprised all JHS Social Studies students and teachers within the Aowin Municipality of the Western North Region. Given that Social Studies is a compulsory subject at the JHS level, every JHS student in the Western North Region formed part of the target population. The total number of JHS students according to the Education Management Information System (EMIS) data from the Municipal Education Office (MEO) was 5,871 learners made up of 3196 males and 2675 females from 71 public JHS spread across ten circuits. The students were children who were mostly in their early or middle adolescence. The students' population ages ranged from 12 to 17. The accessible population

encompassed the entire JHS students and Social Studies teachers in the Enchi circuit. The total number of JHS students in the Enchi circuit was 1,178 made up of 621 males and 557 females. The accessible population takes up a little over 20% of the entire student population in the Aowin Municipality. The total number of Social Studies teachers in the Aowin Municipality is 71 made up of

48 males and 23 females. There were ten JHS Social Studies teachers within the accessible population (Enchi circuit) consisting of eight males and two females.

Sample and Sampling Procedure

A sample is part of a population carefully chosen for a study for which the result would be applied to the entire population (Amedahe & Gyimah, 2019). The study's sample was 110 made up of 100 students and 10 teachers. Krejcie and Morgan's sample determination table was used as a guide to select a sample of 110 comprising 10 teachers and 100 learners for the study (Krejcie & Morgan, 1970 as cited in McNaughton & Cowell, 2018). Sampling is the process of obtaining a representative of a population (sample) for a study. Many techniques can be used to obtain a sample for a study. However, researchers warn about the choice of the technique or procedure used to determine the sample to prevent sampling bias. To avoid sampling bias, the researcher used the multi-stage sampling technique to select the participants for the study (where simple random sampling was used at various stages to select learners whereas convenient sampling was used to select Social Studies teachers). The multi-stage random sampling technique was used because, despite its subjective tendencies, it is more convenient, flexible and cost-effective (Zach, 2021).

The researcher prepared the sampling frame for all schools in the accessible population (Enchi circuit) and obtained ten Junior High Schools.

These schools were paired by the researcher according to proximity. Schools that were at a maximum distance of 200 metres apart were paired. Two schools that were outside the Enchi township but in its outskirts were, however, paired conveniently. Aside from the two schools that were located in the outskirts of the Enchi township, the pairings were done by writing the names of the schools on pieces of paper, folded and placed into a bowl. A colleague teacher who had no idea of what the research was about was called to select only one paper from the bowl without looking into it. The pair of schools that was selected was Enchi Methodist JHS and Enchi College of Education Demonstration JHS (Enchico Demo). These schools were within 120 metres apart and had a combined student population of 360.

Given that learners in these schools were in three different classes (JHS 1–3), and that the research work should not distract the academic activities of learners, the names “participating class” and “non-participating class” were written on three pieces of paper, folded and placed into a bowl. The paper containing ‘participating class’ was one while two pieces of paper contained the ‘non-participating class’. Class representatives from each school were called and asked to form groups of two according to the class they represented from their school. Each group was asked to pick a piece of paper from the bowl. From the activity, the group representing JHS 2 selected the participating class. This class had a combined student population of 120 (58 for Methodist JHS and 62 for Enchico Demo JHS).

Again, the participating class group was dissolved and were asked to pick from two pieces of paper with the inscription ‘treatment’ and ‘control’ which was thrown on the ground. The student that picked the control group

came from Enchico Demo JHS while the one that picked the treatment paper was from Enchi Methodist. The total number of students in the class that picked the control group was 62 while the number of students in the class that picked the treatment group was 58.

Using software called G*Power 3.1.9.2, a sample size of 100 for independent samples (two groups) was obtained at a statistical power of 0.95 and an alpha of 0.05 with Cohen's d of 0.73 on the part of learners. The software produced a control group sample of 50 and the treatment or experimental group sample of 50. To prevent sampling bias once again, the researcher took 62 pieces of papers and wrote 'active' and 'non-active' on them and placed them in the bowl. The 'active' papers were 50 while the 'non-active' papers were 12. Students from the class whose representative picked the 'control' paper were asked to pick only one piece of paper from the bowl in turns. Those who picked the 'active' papers were chosen as the sample for the control group which was 50. A similar thing was done to the students whose representative selected the 'treatment' paper. Again, the 'active' papers were 50 while the 'non-active' papers were eight (8). Those who selected the papers with 'active' written on them were chosen as the sample for the experimental group. At the time the research was initiated, there were 10 known JHSs in the Enchi Circuit. This means that there were 10 Social Studies teachers in the circuit guided that each school had one Social Studies teacher. All the 10 JHS Social Studies teachers were conveniently sampled. This was because the researcher felt they will be in a position to provide the information needed for the study. This yielded a total of 110 participants for the study.

Data Collection Instruments

A study instrument is a tool that is used by the researcher to gather data from respondents. The instruments used by the researcher to obtain data from the respondents were tests and questionnaires. The tests (pretest and posttest) were developed personally by the researcher using topics specified in the JHS Social Studies syllabus. The test was initially made up of 30 multiple-choice items and was given to subject matter experts in the Municipal Education Office and schools in the study area to vet and produce their final comments. Upon vetting and recommendations by the experts, I scaled the items down to 20 multiple-choice items. The questionnaires, on the other hand, were developed based on experts' opinions emanating from their research findings.

Test

Amedahe and Asamoah-Gyimah (2019) explain that a test is an instrument used to measure the traits of an individual on the extent to which that individual possesses a given construct. In other words, a test measures the individual's level of knowledge on a given topic. Once the level is obtained, teachers or educators determine what to add or what to re-emphasize. When a test is conducted, a number is assigned after marking (measured). The number obtained from the measurement determines the extent or level of skill or knowledge possessed by the testee. To ascertain quantitative data on the academic achievements of learners, the researcher used tests. These were pretest and post-test. The pretest was given to both the control group and the experimental group. The pretest consisted of 20 multiple choice items selected from the topics; 'Mapping our Environment', 'Conflict Management and Prevention' and 'Education and Productivity'. The post-test was made up of the

same number of test items on the same topics and was given to both groups a week after the flipped classroom treatment was administered.

Questionnaire

According to McLeod (2018), a questionnaire is an instrument consisting of a series of questions used to gather information from research participants. A questionnaire is quick and provides large information from quite a large sample. However, not all questions on a questionnaire could be answered by a respondent. Respondents may leave questions that bother their minds unattended. Despite its weaknesses, this study used a questionnaire to obtain quantitative data from participants in the study. Two sets of questionnaires helped in the collection of data from participants.

The student's questionnaire comprised three sections, A, B and C and was developed using findings from previous researches reviewed. Section A obtained demographic data from respondents. Section B of the questionnaire was made up of four-point Likert closed-ended statements that required learners to tick, where appropriate, their responses. Participants were expected to indicate whether they strongly Agree (SA), Agree (A), Disagree (D) or Strongly Disagree (SD) to a particular statement or item. The premises were on the perception of learners on the use of the flipped classroom in learning Social Studies. There were 15 statements in all for learners to respond to on the perception they had in using the flipped classroom in learning Social Studies.

Section C of the questionnaire comprised four-point Likert closed-ended questions on the challenges learners face in using the flipped classroom to learn Social Studies. It was made up of 15 statements in total and learners were

required to tick whether they Strongly Agree (SA), Agree (A), Disagree (D) or Strongly Disagree (SD).

Similarly, the teachers' questionnaire comprised two units. Section A obtained data on the Socio-demographic characteristics of teachers while section B obtained data on the views teachers had in using the flipped classroom to teach Social Studies in the JHS within the Aowin Municipality. Section B of the teachers' questionnaire had 15 statements that required teachers to either select Strongly Agree (SA), Agree (A), Disagree (D) or Strongly Disagree (SD) to each statement.

Pretesting of Research Instruments

The research instruments were pre-tested in the Amenfi West Municipality of the Western Region. The area was selected due to its proximity to the Aowin Municipality. Again, the targeted participants in the Amenfi West Municipality shared analogous features with their counterparts in the Aowin Municipality, hence, their choice as the area to test the instruments. Two different schools were selected for the tryout of the instruments. One of the schools had its students answering the test items while the other school had its students answering the questionnaire. The researcher sought permission from the headteacher of the nominated schools for the pilot testing. The headteachers, in turn, introduced me to the teachers concerned and sought time from the staff to allow me to carry out the purpose for my visit.

After the necessary protocols had been laid, 20 students from each school were selected totalling 40 for the tryout of the instruments. After answering the test and questionnaire, the researcher collected the instruments, thanked the participants and their authorities and moved to the house to mark

and record their responses. The responses were marked by the researcher and scores were entered into SPSS. Similarly, two Social Studies teachers from each school totalling four were given the questionnaire for teachers to fill. After providing the necessary responses, the researcher collected the questionnaire, thanked them and went to the house to enter their responses on SPSS.

Validity and Reliability

The researcher constructed test items and gave them to subject area connoisseurs for a review of content validity as indicated by Amedahe and Gyimah (2019), who suggest that content validity is best obtained through expert judgement and not through the use of any statistical tool. The test results obtained from the pilot testing were entered into SPSS and split into two groups with a Cronbach Alpha used to determine its internal consistency. The results from SPSS produced a reliability coefficient of 0.876. Since George and Mallery (as cited in Schrepp, 2020) indicated that a Cronbach Alpha of .70 is acceptable, the researcher deemed the reliability coefficient obtained from the pilot testing (0.87) as acceptable. The questionnaires were adapted from researchers who have tried and tested theirs and produced valid and positive outcomes.

Ethical Considerations

As specified in the thesis preparation guidelines by the School of Graduate Studies (2016), the research could not have been carried out without seeking ethical clearance. As a result, an application form was picked at the Institutional Review Board (IRB) and filled with the necessary information and required documents were attached and waited for approval. Upon critical examination of the proposal by the IRB, ethical clearance was given to the

researcher. To carry out the research. Throughout the period in waiting for the ethical clearance, an application for an introductory letter had been sent to the Department of Basic Education of the University of Cape Coast. The request was granted and the introductory letter was also given. The researcher added the ethical clearance to the introductory letter obtained from the Basic Education Department and delivered copies to the Municipal Education Directorate in Aowin as well as the various headteachers whose schools were selected for the study.

Participants were duly informed of the research and its benefits before they were selected. All participants that were selected were assured of their anonymity and confidentiality. Their parents were also duly informed about their children's participation in research, especially the treatment group.

Data Collection Procedure

An introductory letter was obtained from the Basic Education Department of the University of Cape Coast and ethical clearance was also obtained from the Institutional Review Board of the University of Cape Coast and copies sent to the various headteachers of the schools from which primary data were collected as well as the MEO. The purpose of the letter was to enable the researcher to obtain maximum cooperation from chosen schools. As the authority over the schools in the Municipality, the purpose of the introductory letter to the office was to obtain their permission to conduct the research using schools under their jurisdiction.

Having secured permission from the MEO, the researcher developed a google form that contained the questionnaire for teachers. The link to the form was shared on the circuit teachers' platform for all Social Studies teachers

within the circuit to fill. The School Improvement Support Officer (SISO) assisted the researcher to ensure that all Social Studies teachers within the circuit filled the form. Teachers were given over a week to fill the google form containing the questionnaire. The researcher visited and called teachers to remind them of the questionnaire on about three occasions in addition to the SISO's incessant call. All teachers filled their questionnaire and submitted it when the researcher and the SISO called them to remind them to do so.

In terms of the test, all learners in the experimental and control group were given a pretest to answer before the research work began. The two schools were visited by the researcher and data on students who would be able to access the google form either through their smartphones or that of their parent's device were ascertained. Having received an encouraging number of students who could answer through a google form, the learner's contact numbers were taken and a WhatsApp group platform was created for that purpose. Links to the pretest was posted to learners on the platform and learners were asked to fill the form. To prevent learners from copying and exiting screens to check answers using their devices, the researcher embedded the form with a plugin (add-on) called Form Presenter+Timer to set the time for the test. Each test-taker was given one minute to answer a test item and five minutes to review answers before submitting. This means learners used a total of 25 minutes to write the pretest. The timer started counting down as soon as learners logged in to begin the test. A total of 59 students from both the treatment and control group answered the pretest using the google form.

Students who could not have access to any device were made to answer the questions using a print-out version of the same items used for the google

form. They also used the same 25 minutes to answer the questions. In all 41 learners answered the paper-based pretest under the auspices of the researcher and their class teachers. The learners' question papers were retrieved, marked and their scores were entered into SPSS.

After the pretest result was entered, three weeks were used to administer the treatment to the experimental group. Each week dealt with one major topic. Slides were prepared from the topics in the Social Studies syllabus that were chosen for this study. The slides contained questions at the end of each session that learners were expected to use to check their understanding of what they were learning before they met face-to-face. An Ashampoo Snap 12 screencasting software was used to record videos of slides alongside the teacher delivering the content. Recorded videos were later compressed but maintained video quality and sent to the learners' smartphones. To save learners from buying data bundles, they were given specific days and times to bring their smartphones to the researcher to load the contents unto it. This was done to save the learners from the financial burden of obtaining data bundles to download the videos. Some videos were also uploaded to youtube and links were provided on students' WhatsApp group platforms for those who were not able to submit their devices to download at their cost. Learners were instructed never to share the links with their friends at Demonstration school since they will be attended to after theirs.

Those who did not have smartphones were given DVDs that contained the same content as their friends with smartphones. In some instances, reading materials were also given to learners to supplement the video that they watched. After watching the videos, all learners were engaged in class discussions during

face-to-face meetings. This was usually done through the teacher calling some of the learners to debate what they learned from the video they watched at home or discussed what they read. After brief discussions, learners were given tasks to perform in groups. In all these situations, the teacher remained with them for the entire lesson period. Students who had challenges in dealing with the problems given were at liberty to call their teacher to explain things further to them.

One week after the treatment was applied to teach the selected topics, the researcher administered a posttest to learners of both experimental and control groups. The posttest contained the same content as the pretest but was reshuffled. This changed the order in which the questions appeared. Both the treatment and control groups wrote the posttest. The students who wrote the pretest using the google form increased to 61 while those who wrote the paper-based test reduced to 39. This was because two learners whose parents had acquired smartphones within the period of the research accessed their questions on their parents' devices. The results were pulled from google drive and entered into an SPSS spreadsheet together with the results from the paper-based test.

To find out the perception of learners on the approach used by the researcher, learners were given questionnaires to fill. Some answered the questionnaire through google forms while others answered paper-based. Just like the researcher did initially, the researcher visited the experimental group's school and sought permission from the headteacher to make enquiries about the number of students who had smartphones and computers to access the internet and those who did not have smartphones and computers. Upon receiving the information and a sizeable number of students in the experimental group had

means of accessing the internet, a google form was also developed for the learners. The researcher created a WhatsApp group platform for participants who had smartphones and sent them the google form link. They were briefed face-to-face and on the WhatsApp platform to fill the questionnaire and report any challenges they faced to the researcher. Learners who had no access to any smartphone but used televisions to watch video tutorials had their questionnaire printed on paper and were given four days to fill. Such learners were also encouraged to alert the researcher on situations where they faced challenges in filling the questionnaire. Since the majority of students answered the questionnaire through a google form, retrieval of the questionnaire was not a problem for the researcher. The return rate of the tests and questionnaires was 100%. No changes were made to the data collected.

Data Processing and Analysis Procedure

The results of both the pretest and posttest were entered into SPSS and saved with a distinctive name. For easier access and analysis, the data from both the control group and experimental group were entered into one spreadsheet. The responses obtained from the students and teachers' questionnaires were coded as '4 for Strongly Agree'; '3 for Agree'; '2 for Disagree' and '1 for Strongly Disagree'. Statements that required yes and no answers were coded 1 for yes and 2 for no. In terms of gender, '1 was used for male' and '2 for female'. The age range of teachers was also coded as '21 – 30 for 1'; '31 – 40 as 2'; '41 – 50 as 3' and above '50 as 4'.

A paired sample t-test was run to find out the differences between the mean scores of the control and treatment groups in terms of the pretest and posttest. The results obtained from the paired sample t-test analysis was

recorded and presented in chapter four. Similarly, an independent sample t-test was also run to find the difference between the mean of the pretest score of the experimental group and the control group. The same independent sample t-test was also used to find out if differences existed in the means of the posttest scores of both the experimental group and the control group. The results obtained from this analysis was also recorded and presented in a table in chapter four.

Data on the perception of learners on the use of the flipped classroom in learning Social Studies, the challenges learners face in using the flipped classroom to learn and teachers' views on the use of the flipped classroom in teaching Social Studies were analysed using means and standard deviations. The Socio-demographic data obtained from the questionnaire for both teachers and learners were analysed using frequency and percentage tables. All results from respondents have been presented in chapter four.

Summary

The study sought to find out the influence of the flipped classroom model on the academic achievement of learners. This section examined the various research methods that were applied throughout the research. The study made use of the quasi-experimental design. The multi-stage sampling technique was used to obtain a sample of 110 made up of 10 teachers and 100 learners. Test and questionnaires were the main instruments used to collect data from respondents. The chapter concluded by indicating how data was analysed with results discussed in chapter four.

CHAPTER FOUR

RESULTS AND DISCUSSION

Overview

The study was conducted to ascertain the influence flipped classroom model has on the academic achievements of JHS Social Studies learners in the Aowin Municipality. Specifically, the study sought to:

- i. determine the influence the flipped classroom model has on the academic achievements of JHS Social Studies learners in the Aowin Municipality.
- ii. elicit the perception of JHS Social Studies learners on the use of the flipped classroom model in the Aowin Municipality.
- iii. investigate the challenges JHS Social Studies learners face in using flipped classroom models to learn Social Studies in the Aowin Municipality.
- iv. elicit the views of JHS Social Studies teachers on the use of flipped classroom model in teaching Social Studies in the Aowin Municipality.

To address these objectives, tests were given to learners to measure the influence that the flipped classroom had on their academic performance. A questionnaire was also given to learners to find out about their perceptions of the use of the flipped classroom in learning Social Studies and the challenges associated with the use of the flipped classroom model in teaching and learning Social Studies. A questionnaire was also administered to teachers to find out

their views on the use of the flipped classroom in teaching Social Studies in the Aowin Municipality. This part, therefore, presents the fallouts obtained from the instruments and a discussion of the results. The socio-demographic physiognomies of the respondents which were deemed relevant to the study are first presented. The t-test was used to elicit the extent to which flipped classroom model influenced the performance of the students in Social Studies. Descriptive statistics including, frequency counts, percentages, means and standard deviations generated from the questionnaire administered to both students and teachers were used to describe the perception of students about the flipped classroom and the challenges associated with it as well as the views of teachers about the flipped classroom.

Socio-demographic Data of Respondents

Table 1: Sex Distribution of Students

Sex/Group	Control (%)	Experimental (%)	Total (%)
Male	23 (46)	26 (52)	49 (49)
Female	27 (54)	24 (48)	51 (51)
Total	50 (100)	50 (100)	100 (100)

Source: Field survey (2021)

Results from Table 1 show a cross-tabulation of the sex distribution of learners that fell within the experimental group and control group of the study. From the table, it is seen that 26 males representing 52% participated in the study as part of the experimental group while 24 females representing 48% participated in the study as part of the experimental group. Results from Table 1 indicate that the control group consisted of 23 males and 27 females. Again,

it can be seen that, though more females than males were included in the control group, the difference is not huge enough. This shows that the study made use of both sexes. This means that the findings of the study are generalisable to both sex groups. Aside, establishing the sex distribution of the study was necessary as research studies suggest the importance of sex in decision making with regards to the implementation of an intervention (Tannenbaum et al., 2016).

Another socio-demographic data that was collected was the distribution of the students. According to the Ministry of Education (2018), learners within the Junior High Schools in Ghana fall within the ages of 12 to 15 with few cases of learners being above 15 years. The ages of the learners were taken to find out if they commensurate with the expectations of the Ministry of Education. Again, it was necessary to determine the age distribution of both groups to ensure that, students for both groups do not vary so much in age. The results obtained from respondents are publicised in Table 2.

Table 2: Age Distribution of Learners

No. of Learners	Minimum Age	Maximum Age	Mean
Experimental	13	17	14.34
Control	12	18	14.22

Source: Field survey (2021)

Results from Table 2 show that the minimum age of learners was 13 while the maximum age was 17 for students in the experimental group with a mean age of 14.34. The age distribution for the control group as presented in Table 2 shows a minimum age of 12 and maximum age was 18. While the maximum age compared to the treatment group is higher, it is seen that the minimum age of the learners in the control group is lower than that of the

treatment group. The mean age of the control group was 14.2, which is a fraction just below the mean age of the treatment group (mean = 14.34). The mean age of the control group, though relatively lower than that of the experimental group, was within the age range of learners in the JHSs as expected by Ghana's Education Ministry. This tallies with the expectation of the Education Ministry and strengthens the researcher's intent of working with learners in the JHSs in the Municipality. It further suggests that any differences in performances cannot be attributed to age since both groups were similar in age.

Results from Teachers' Questionnaire on their Socio-demographic Data

The questionnaire given to Social Studies teachers sought to find out the socio-demographic characteristics of teachers in the Junior High Schools within the Aowin Municipality. The questionnaire sought to find out characteristics such as their sex, the ages of teachers, the number of years they had taught the subject, their knowledge of the flipped classroom and their usage of the flipped classroom. The results from the questionnaire have been presented with tables starting with the gender of teachers.

Table 3: Sex Distribution of Teachers

Gender	Frequency	Percentage (%)
Male	8	80
Female	2	20
Total	10	100

Source: Field survey (2021)

For the researcher to be able to generalise the findings to all kinds of teachers, data were solicited from the teachers on their sex. As seen in Table 3, out of the 10 teachers who were conveniently selected for the study because

they taught Social Studies at the JHSs within the Aowin Municipality, eight were males. This represents 80% of the teachers selected for the study. Females, on the other hand, were two representing 20% of the teachers selected for the study. This revealed to the researcher that the teachers teaching Social Studies in the Aowin Municipality were mostly males. Despite this finding, the researcher will be able to generalise the results to every teacher because two females were involved.

Having obtained the sex characteristics of respondents, the researcher proceeded to determine the age of teachers who were teaching Social Studies at the time of the research. The results have been presented in Table 4.

Table 4: Age Distribution of Teachers

Age Range	Frequency	Percentage (%)
21 – 30	2	20
31 – 40	8	80
Total	10	100

Source: Field survey (2021)

Table 4 shows that two of the respondents representing 20% were within the ages of 21 – 30 years. Eight respondents were between the ages of 31 – 40, which represented 80% of respondents. No Social Studies teacher from the sample was above forty years. This shows that most of the teachers were in the ages that Rahida Aini, Rozita and Zakaria (2018) expect to be highly effective. The next item that the researcher was interested in was the teaching experience of teachers who were selected for the study. The results from the questionnaire have been presented in Table 5.

Table 5: Teaching Experience in Social Studies

Experience (Years)	Frequency	Percentage (%)
1 – 5	8	80
6 – 10	2	20
Total	10	100

Source: Field survey (2021)

The results as presented in Table 5 showed the teaching experience of teachers teaching Social Studies in the Aowin Municipality. From the table, eight teachers who were teaching Social Studies had taught the subject from one to five years. This was 80% of the teachers selected for the study. Two teachers, on the other hand, had taught Social Studies for more than five years, which constituted 20% of the respondents. The results showed that a lot of the teachers have not taught Social Studies for a longer time. This means that although they might be familiar with some approaches in teaching Social Studies, they were still at the stage where they were gathering experience in teaching Social Studies. This may make these inexperienced teachers try other new methods of teaching Social Studies until they come into contact with what works best. This is contrary to the assertion of Kenney (2019), who indicated that teachers may resist the use of new methods of teaching because they are familiar and accustomed to older methods of teaching.

Table 6: Teachers’ Knowledge of the Flipped Classroom

Response	Frequency	Percentage (%)
Yes	10	100

Source: Field survey (2021)

For the researcher to be able to solicit teachers’ views on the use of the flipped classroom, there was the need to find out whether teachers knew the FCM. The fallouts that emerged from the questionnaire have been presented in Table 6. From Table 6, all 10 respondents stated that they have heard of the flipped classroom. This means that teachers sampled for the study knew about the flipped classroom. This made the researcher find out from them whether they use or have used the model in their daily teaching. The results from this question have been presented in Table 7.

Table 7: Teachers’ Use of the Flipped Classroom

Responses	Frequency	Percentage (%)
Yes	9	90
No	1	10
Total	10	100

Source: Field survey (2021)

The teachers sampled for the study indicated that they use the flipped classroom in teaching Social Studies. This is seen in Table 7 where nine teachers representing 90% responded ‘yes’ to the question while only one teacher representing 10% said he or she had never used the FCM to teach Social Studies.

The socio-demographic characteristics data that the researcher had from respondents enabled him to move on to obtain the views of teachers on the use of the flipped classroom in teaching Social Studies. The results on the views of teachers in using a flipped classroom to teach Social Studies would be presented later in this chapter.

Analyses of Results Relating to the Research Questions

Research Question 1: What influence has the flipped classroom model got on the academic achievements of JHS Social Studies learners in the Aowin Municipality?

Studies from varied sources have indicated the significant influences that the flipped classroom has on the academic achievements of learners. Consequently, this research question sought to establish the influence of the flipped classroom model on the academic achievements of JHS Social Studies students in the Aowin Municipality. To find answers to this question, four hypotheses were formulated and tested. They included;

H₁: There is no statistically significant difference between the pre-test mean score of JHS Social Studies learners taught using flipped classroom and the pre-test mean score of JHS Social Studies learners taught using traditional methods of teaching.

H₂: There is no statistically significant difference between the post-test mean score of JHS Social Studies learners taught using flipped classroom and the post-test mean score of JHS Social Studies learners taught using traditional methods of teaching.

Results from the tests (pre-test and post-test) that were administered to the students were used to find the influence of the flipped classroom model on

Social Studies learners’ academic performance in the Aowin Municipality. The results of the tests were analysed using descriptive statistics (mean and standard deviation) and inferential statistics [t-tests (independent sample)]. The first to be analysed was the descriptive statistics of all tests given to respondents in both the control and experimental group. This was done using the descriptive statistics tool in SPSS version 26. The results of the analysis have been presented in Table 8.

Table 8: Descriptive Statistics of Pretest and Posttest Results of Groups

Test	N	Min.	Max.	Mean out of 20	Std. Deviation
Pre-test scores of experimental group	50	2	15	6.78	2.743
Post-test scores of experimental group	50	10	20	15.54	2.305
Pre-test scores of control group	50	2	13	6.50	2.460
Post-test scores of control group	50	7	16	10.92	2.514

Source: Field survey (2021)

N = Sample, Min = minimum score, Max = maximum score

From Table 8, it is seen that learners who answered the tests in each group were 50 in all cases. It is seen that the mean score of the experimental group in the pretest was 6.78 with a standard deviation of 2.743. The post-test mean score of the experimental group was 15.54 with a standard deviation of 2.305. This shows that the mean score of the experimental group in the posttest

was higher than the mean score of the experimental group in the pretest. The standard deviation of 2.305 in the posttest of the experimental group was lower than the standard deviation of 2.743 during the pre-test. This means that the performance of the class after the use of the flipped classroom was more homogeneous than it was before the treatment. This suggests that the use of the flipped classroom model can bridge the gap between the high achievers and the low achievers in the classroom.

Table 8 also shows that the mean score of the control group in the posttest was 10.92 with a standard deviation of 2.514. Meanwhile, the mean score of the same group in the pretest was 6.50 with a standard deviation of 2.460. The standard deviation of 2.460 obtained during the pretest and 2.514 during the posttest of the control group shows that they are identical indicating that the extent to which they are clustered around the mean score was very identical. This revealed that there was not much difference in terms of the varied individual learner characteristics in the control group even after the posttest.

H₁: There is no significant difference between the pre-test mean score of JHS Social Studies learners taught using flipped classroom and the pre-test mean score of JHS Social Studies learners taught using traditional methods of teaching.

This hypothesis sought to compare the performance level of the experimental and the control groups before the treatment was given to the experimental group. This was to find out if both groups had similar performance levels before the treatment. The pretest scores for both groups were compared using the independent t-test. Table 9 presents the outcomes.

Table 9: Independent Sample t-test for Pretest for Experimental and Control Group

	Levene's test for equality of variance		Test for equality of means		
	F	sig	t	df	Sig(2-tailed)
Equal variances assumed	0.261	0.611	0.537	98	0.592
Equal variances not assumed			0.537	96.862	0.592

Source:Field survey (2021)

One of the assumptions for an independent t-test is the test for equality of the variances. Results from Table 9 indicates a sig value of 0.611. Since the sig value of 0.611 is greater than the alpha level of 0.05, the differences in the variances were not statistically significant. Consequently, equal variances were assumed for the pretest scores. Again, Table 9 shows that the difference in means between the control and experimental groups was not statistically significant at $t(98) = 0.537, p >.05$. This means that the two groups were performing almost at the same level before the use of the flipped classroom model.

H₂: There is no statistically significant difference between the posttest mean score of JHS Social Studies learners taught using flipped classroom and the post-test mean score of JHS Social Studies learners taught using traditional methods of teaching.

The study further sought to compare the influence of the flipped classroom model and the traditional method on the performance of the students. The independent sample t-test was used to compare the posttest score of the

control group and the experimental group. Table 10 presents the results of the independent t-test.

Table 10: Independent t-test for Post-Test of both Experimental and Control Groups

	Lavene’s test for equality of variance		Test for equality of means		
	F	sig	t	df	Sig(2-tailed)
Equal variances assumed	0.226	0.636	9.577	98	0.000
Equal variances not assumed			9.577	97.274	0.000

Source: Field survey (2021)

From Table 10, Levene’s test for equality of variances yielded a sig value of 0.636. Since the sig value of 0.636 was greater than the alpha level of 0.05, it can be concluded that there was no statistically significant difference between variances. Hence, equality of variances was assumed for the study. From Table 10, the test for equality of means resulted in a t-statistic of 9.577 and a sig value of $p < .001$. Since the sig value of $p < .001$ is less than the alpha level of 0.05, the difference between the posttest scores for both groups was statistically significant. The descriptive statistics in Table 8 shows that the mean score for the experimental group during the posttest was higher than the mean score for the control group during the posttest.

Research Question 2: What is the perception of JHS Social Studies learners on the use of the flipped classroom model in learning Social Studies in the Aowin Municipality?

This research question sought the perceptions of the students in the experimental group about the use of the flipped classroom model in learning Social Studies. Fifteen items were found on this section of the questionnaire.

The questionnaire that was administered to the students was used to find answers to this research question. Table 11 presents the results.

Table 11: JHS Students' Perceptions on the Use of the Flipped Classroom

Statement	SD (%)	D (%)	A (%)	SA (%)	Mean	Std. Dev.
I feel that watching videos and taking notes from them, contributes to my learning.	0(0)	0(0)	6(12)	44(88)	3.88	.328
I feel that trying my hands on the exercises posed in the videos help my learning.	0(0)	2(4)	15(30)	33(66)	3.62	.567
The practical problems I solve in class after watching videos at home contributes to my learning.	0(0)	2(4)	16(32)	32(64)	3.60	.571
I become attentive while watching a video or reading any material assigned to me by my teacher and that contributes to my learning.	0(0)	1(2)	6(12)	43(86)	3.84	.422
The videos or materials that I watch or read before coming to class help me to ask practical questions.	0(0)	0(0)	5(10)	45(90)	3.90	.303
When I solve problems in class with my friends, I get enough time at home to do my assigned tasks.	2(4)	4(8)	23(46)	2(42)	3.26	.777
I wish all subjects will use this form of learning	0(0)	1(2)	6(12)	43(86)	3.84	.422
I try my best to watch all or more than half of the videos prepared by my teacher.	2(4)	4(8)	17(34)	27(54)	3.38	.805
I think I learn Social Studies better in a flipped classroom than in the conventional classroom.	0(0)	5(10)	17(34)	28(56)	3.46	.676

I get the opportunity to pause, rewind and become clear on concepts in the videos before I proceed.	2(4)	3(6)	13(26)	32(64)	3.50	.789
My interest in Social Studies has changed for the better because I can now reason along the ideas obtained from the videos I watch at home.	0(0)	2(4)	18(36)	30(60)	3.56	.577
Doing homework in class is better because I can ask my friends or my teacher for clarification on questions I am not clear.	22(44)	18(36)	4(8)	6(12)	1.88	1.003
I only enjoy the flipped classroom when materials are prepared by my teacher himself.	0(0)	1(2)	1(1)	48(96)	3.94	.314
The teacher has enough time to explain issues to me when I approach him for clarity.	1(2)	3(6)	16(32)	30(60)	3.50	.707
Flipped classroom exposes me to relevant educational media that help me to study Social Studies.	3(6)	2(4)	15(30)	30(60)	3.44	.837

Source: Field survey (2021)

Mean of means: 3.56

SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Each item on the questionnaire had four responses that the respondent needed to make a choice. The responses were coded and ranked accordingly as; strongly agree = 4, agree = 3, disagree = 2 and strongly disagree = 1. A mean less than 1.5 indicated that a lot of the respondents strongly disagreed with the statement. A mean greater than 1.5 but less than 2.5 indicated that the majority of the respondents disagreed with the statement while a mean greater than 2.5 but less than 3.5 showed that many of the respondents agreed to the statement.

Finally, a mean greater than 3.5 showed that most of the respondents strongly agreed with the statement.

Table 11 shows the statements that were found on the questionnaire and the results that were produced. From Table 11, a lot of the respondents strongly agreed that they felt watching videos and taking notes from them, contributes to their learning ($M = 3.88, SD = 0.328$). Similarly, the majority of the respondents stated that they become attentive while watching a video or reading any material assigned to them by their teacher and which contributed to their learning ($M = 3.84, SD = 0.422$).

In terms of the exercises and quizzes posed alongside tutorials, most of the respondents indicated that they felt the exercises and quizzes in the videos helped their learning ($M = 3.62, SD = .567$). Once more, many of the respondents strongly agreed that practical problems they did in the classroom after being exposed to the content outside the class contributed to their learning ($M = 3.60, SD = .571$). The same can be reported of the videos or materials that learners watch or read before going to class. Most of the respondents indicated that such activity helps them to ask practical questions in class ($M = 3.90, SD = .303$). A lot of the respondents wished that all subjects employ the use of the flipped classroom ($M = 3.84, SD = .422$).

Again, data from Table 11 shows that a sizeable number of the respondents strongly agreed with the statement that they get the opportunity to pause, rewind and become clear on concepts in the videos before proceeding ($M = 3.50, SD = .789$). The interest of respondents in Social Studies changed for the better because they could now reason along the ideas obtained from the videos they watch at home ($M = 3.56, SD = .577$). Though learners interest in

the subject had changed for the better, many of the respondents indicated that they only enjoy the flipped classroom when materials are prepared by their teacher himself, yielding a mean of 3.94 and a standard deviation of .314. Respondents also claimed that their teacher had enough time to explain issues to them when they approached him for clarity ($M = 3.50, SD = .707$).

Table 11 also reveals that many respondents agreed that when they solve problems in class with their friends, they get enough time at home to do their assigned tasks. This statement produced a mean of 3.26 with a standard deviation of .777. In terms of learners watching videos, a quite huge number of respondents agreed that they tried their best to watch all or more than half of the videos prepared by their teacher ($M = 3.38, SD = .805$). On the issue of learning Social Studies better, most of the respondents agreed that they learn Social Studies better in the flipped classroom than in the traditional classroom ($M = 3.46, SD = .676$). Again, most of the respondents agreed that the flipped classroom exposes them to relevant educational media that help them to study Social Studies with a mean of 3.44 and a standard deviation of .837. However, a huge number of respondents disagreed that doing homework in class is better because they can ask their friends or teacher for clarification on questions they are not clear with. This yielded a mean of 1.88 and a standard deviation of 1.003.

Research Question 3: What are the challenges JHS Social Studies learners face in using the flipped classroom model to learn?

This research question sought the challenges learners in the experimental group face in using the flipped classroom to learn Social Studies. Just like the case of students' perception, the questionnaire presented 15 items

for learners to respond to on a four-point Likert scale. The results obtained from respondents have been presented in Table 12.

Table 12: Challenges Learners Face in Using the Flipped Classroom to

Learn Social Studies

Statement	SD (%)	D (%)	A (%)	SA (%)	Mean	Std. Dev.
I do not understand concepts clearly when the videos are prepared by a different person rather than my teacher.	2(4)	3(6)	21(42)	24(48)	3.34	.772
In some instances, I exhaust data mid-way through the watching of online videos.	0(0)	1(2)	5(10)	44(88)	3.86	.405
Some of the videos are too long and make me lose focus.	3(6)	13(26)	21(42)	13(26)	2.88	.872
Pre-class activities are too much and become a burden when I add to my household duties.	11(22)	22(44)	5(10)	12(24)	2.36	1.083
I do not get the opportunity to ask questions immediately when I am not clear on some issues.	5(10)	5(10)	20(40)	20(40)	3.10	.953
Watching videos are boring and passive.	26(52)	11(22)	9(18)	4(8)	1.82	1.004
I do not get enough time to do other tasks assigned by different subject area teachers.	5(10)	16(32)	5(10)	24(48)	2.96	1.106
I do not enjoy watching the videos.	22(44)	15(30)	5(10)	8(16)	1.98	1.097
My relatives sometimes feel reluctant to let me use their devices to access information on the internet.	1(2)	3(6)	16(32)	30(60)	3.50	.707
I do not get a good network to access the internet sites given by my teacher.	20(40)	15(30)	8(16)	7(14)	2.04	1.068
My household members feel I deprive them of	1(2)	2(4)	18(36)	29(58)	3.50	.678

their favourite television programmes when I use the television to watch the CDs given by my teacher.							
Some of the words in the reading materials assigned to me are difficult to understand.	2(4)	4(8)	17(34)	28(54)	3.38	.805	
I am not given extra money to buy data for my online activities.	0(0)	0(0)	15(30)	35(70)	3.70	.463	
I find it difficult to make my notes when watching videos or reading material.	31(62)	14(28)	2(4)	3(6)	1.54	.838	
Frequent light outs in my village prevent me from watching videos most of the time.	0(0)	5(10)	12(24)	33(66)	3.56	.675	

Source: Field survey (2021)

Mean of means = 2.901

From Table 12, it is seen that five items produced a mean greater than or equal to 3.50. For instance, a mean of 3.86 and a standard deviation of .405 of the statement that sought to find out if learners exhaust data mid-way through the watching of online videos, shows that learners had bigger challenges related to data. Similar other statements that produced means greater than or equal to 3.50 include relatives sometimes feeling reluctant to let students use their devices to access information on the internet ($M = 3.50, SD = .707$), household members feeling learners deprive them of their favourite television programmes when using the television to watch the CDs or DVDs given by their teacher ($M = 3.50, SD = .678$), students not getting money to buy data for online activities ($M = 3.70, SD = .463$), and frequent light outs preventing learners from watching videos most of the time before going to the classroom ($M = 3.56, SD = .675$).

Table 12 also shows that most of the respondents agreed that they do not understand concepts clearly when the videos were prepared by a different

person rather than their teacher ($M = 3.34, SD = .772$). It also revealed that many respondents agreed with that statement that they did not get the opportunity to ask questions immediately when they were not clear on some issues ($M = 3.10, SD = .953$). Yet, most of the respondents said that some of the words in the reading materials assigned to them to read were difficult to understand ($M = 3.38, SD = .805$). This showed that one of the greatest challenges learners face in using the flipped classroom to learn Social Studies is associated with understanding contents as revealed by Cabri (2018), who found out that learners challenge was related to content. Other challenges that were revealed by the questionnaire administered to learners include lengthy videos ($M = 2.88, SD = .872$), and lack of time to work on other subjects ($M = 2.96, SD = 1.106$). With a mean of means of 2.901, the research revealed that learners face many challenges when using the flipped classroom to learn.

Research Question 4: What is the view of JHS Social Studies teachers on the use of flipped classroom model in teaching Social Studies in the Aowin Municipality?

The study also sought to find out if Social Studies teachers had positive or negative views on the use of the flipped classrooms in teaching Social Studies. As a result, a 15-item questionnaire of the four-point Likert scale type was administered to them. A mean of greater than or equal to 3.50 shows that many of the teachers strongly agreed with the statement and that was an indication that Social Studies teachers have positive views on the use of the flipped classroom in teaching Social Studies within the Aowin Municipality. A mean greater than or equal to 2.50 but less than 3.50 showed that most teachers agreed with the statement while a mean of less than 2.50 was an indication that

teachers either disagreed or strongly disagreed with the statement. The results from the teachers' questionnaire were used to find answers to this research question and are presented in Table 13.

Table 13: Social Studies Teachers' Views on the Use of the Flipped Classroom

Statement	SD (%)	D (%)	A (%)	SA (%)	Mean	Std. Dev.
Flipped classroom makes students learn better and score higher when used appropriately.	0(0)	0(0)	4(40)	6(60)	3.6	.516
Flipped classroom provides a better opportunity to interact with students during class.	0(0)	1(10)	3(30)	6(60)	3.5	.707
Flipped classroom makes students go to class more prepared.	0(0)	0(0)	3(30)	7(70)	3.7	.483
Preparing videos and other materials for learners in a flipped classroom model helps teachers to learn more about the content.	0(0)	0(0)	2(20)	8(80)	3.8	.422
Flipped classroom makes learners interact with technological tools, thus, connecting them globally.	0(0)	0(0)	2(20)	8(80)	3.8	.422
Flipped classroom model motivates learners to learn.	0(0)	0(0)	3(30)	7(70)	3.7	.483
Flipped classroom provides an opportunity for absent students to catch up with knowledge lost during their absence.	1(10)	1(10)	1(10)	7(70)	3.4	1.075
Flipped classroom enables positive student-student and student-teacher relationships.	0(0)	0(0)	4(40)	6(60)	3.6	.516
Flipped classroom makes the teacher cover a wide range of content areas.	0(0)	1(10)	4(40)	5(50)	3.4	.699

Flipped classroom promotes critical thinking in students.	0(0)	1(10)	2(20)	7(70)	3.4	.699
Flipped classroom make students learn at their pace.	0(0)	1(10)	3(30)	6(60)	3.5	.707
Preparing videos or materials for learners in a flipped class is time-consuming.	0(0)	5(50)	2(20)	3(30)	2.8	.919
Flipped classroom adds an extra burden to the teacher.	0(0)	4(40)	4(40)	2(20)	2.8	.789
There is no guarantee that learners will watch or read materials assigned to them.	0(0)	7(70)	2(20)	1(10)	2.4	.699
The flipped classroom is good for teaching students in the cities.	1(10)	4(40)	3(30)	2(20)	2.6	.966
Source: Field survey (2021)					<i>Mean of means = 3.33</i>	

Information from Table 13 showed that a greater number of teachers strongly agreed with the statement that the flipped classroom makes students learn better and score higher when used appropriately ($M = 3.6, SD = .516$). It also showed that most of the teachers strongly agree with the flipped classroom providing a better opportunity for them to interact with students during class and also make students learn at their pace ($M 3.5, SD = .707$). Again, most of the teachers strongly agreed with the flipped classroom making students go to class more prepared ($M = 3.7, SD = .483$). It was also realised from the questionnaire that most of the respondents indicated that they strongly agreed with the statement that preparing videos and other materials for learners in a flipped classroom model helps teachers to learn more about the content ($M = 3.80, SD = .422$). The same result was produced for the statement that the flipped classroom makes learners interact with technological tools, thus, connecting them globally. A lot of the respondents also strongly agreed with the statement that the flipped classroom model motivates learners to learn ($M = 3.7, SD = .483$). Also, most of the respondents strongly agreed that the flipped

classroom enables positive student-student and student-teacher relationships ($M = 3.6, SD = .516$).

The views of teachers were solicited to find out if the flipped classroom provides an opportunity for absent students to catch up with knowledge lost during their absence and Table 13 shows that the majority of the teachers agreed to the statement, producing a mean of 3.4 and a standard deviation of 1.075. Again, the researcher solicited the teachers' views on the flipped classroom making the teacher cover a wide range of content areas and also promotes critical thinking in students and the results as reported in Table 13 shows that most of the teachers agreed with the statement ($M = 3.4, SD = .699$).

One of the challenges that teachers face in using the flipped classroom to teach is the time that teachers need to prepare their materials for the learners. The researcher, therefore, wanted to know the views of teachers in that regard. Results from Table 13 shows that a lot of the respondents agreed that preparing videos or materials for learners in a flipped class is time-consuming ($M = 3.4, SD = .699$). In terms of adding extra burden to the teacher, it was also revealed by Table 13 that a lot of the teachers agreed that the flipped classroom adds an extra burden to the teacher ($M = 2.8, SD = .789$). Most teachers also agreed that the flipped classroom is good for teaching students in the cities ($M = 2.6, SD = .966$).

On the issue of no guarantee that learners will watch or read materials assigned to them, a mean of 2.4 and a standard deviation of 0.699 is an indication that most of the teachers disagreed with the statement.

Discussion of Results

Research question 1: What influence has flipped classroom got on JHS Social Studies learners' academic achievement in the Aowin Municipality?

This research question wanted to find out if the flipped classroom model has any significant influence on the academic achievement of students in the JHS in the Aowin Municipality. To obtain answers to this research question, pretest and posttests were conducted to determine the performance of learners before and after the treatment. To further find out if the results produced from the test emerged from the treatment given, two hypotheses were formulated and tested. The t-test tool in SPSS version 26 helped the researcher to obtain the differences in the performance of learners. The independent sample t-test result obtained from testing Hypothesis 1 [$t(98) = 0.537, p > .05$] showed that there was no statistically significant difference in the academic achievement of students in the experimental group and control group in terms of the pretest. This indicates that the learners were at the same level even though the means of the two groups varied ($m = 6.78, SD = 2.743$ for experimental, $m = 6.50, SD = 2.305$ for the control group). Thus, the difference in performance can therefore be attributed to sampling errors. This suggests that any statistical difference noticed after the treatment can be attributed to the different conditions given to the two groups.

The paired sample t-test was used to compare the pre-test scores and post-test scores of the students for both groups. Beginning with the experimental group, the paired sample t-test produced a significant difference in the academic achievements between the pretest and posttest scores $t(49) = 23.546, p < 0.001$.

This presupposes that the use of the flipped classroom is an effective pedagogical tool that can improve the performance of the students. This finding is in concordance with the findings of Pandow et al. (2020) who postulated that the flipped classroom significantly improves the academic achievements of learners. Again, the findings commensurate with those of Blázquez et al. (2019),

who through a randomised trial in the University of Zaragoza, indicated that the flipped classroom significantly improved the performance of students in Social Work. The findings, however, contradict the findings of Saunders (2014) who examined the effect of the flipped classroom on the academic achievements of students in a high school Mathematics and concluded that the use of the flipped classroom did not significantly improve the performance of the students. This suggests that though the flipped classroom has led to an improvement in the academic achievements of JHS Social Studies students in the Aowin Municipality, it might not be effective for all disciplines in the school curriculum.

The paired sample t-test results for the control group also showed a significant difference in the academic achievements of learners in the control group during the pretest-posttest comparison, $t(49) = 18.887, p < 0.001$. This means that the use of the traditional approach in teaching Social Studies also increases the academic achievements of learners. Sequel to these findings, it can be concluded that the flipped and traditional methods of teaching Social Studies are effective. This suggests that, amid a pandemic such as Covid-19 and the advancement of technology, the flipped classroom is a good alternative for teachers to teach Social Studies.

The study went further to explore the differences in effectiveness between the two conditions. Thus, the independent sample t-test was used to compare the performances of the students in both groups during the posttest. The results revealed that there was a statistically significant difference in the performances of students between the control group and the experimental group. This means that the use of the flipped classroom model is more effective in improving the academic achievement of students than the traditional method of teaching Social Studies. This contradicts the findings of Smallhorn (2017), who in a study reported that there was no statistically significant difference between the academic performance of students taught using flipped classroom models and the academic performance of students taught using active learning strategies in the traditional methods of teaching with the statistics for two different year groups reported as $M = 58.52, SD = 19.96; M = 58.25, SD = 21.45; p = .864; t(46) = .172; d = .013$. The study, however, agrees with the findings of Karadeniz (2018), who through a pretest-posttest experimental study using undergraduates students of the University of Anadolu found out that there was a massive improvement in the academic achievement of students who were taught using the flipped classroom model than those taught using the traditional approach. It again confirms the assertion of Quansah et al. (2018), who through action research reported on the positive influences of the flipped classroom in teaching density in Integrated Science to JHS 1 students. In effect, the use of the flipped classroom aside from bridging the gap between the low achievers and high achievers in the classroom significantly improves the achievement level of students. Similar findings were also reported in the work of Albalawi (2018), whose study investigated the effectiveness of the flipped classroom in

teaching Math2 courses to preparatory year students of the University of Tabuk and found out a significant increase in the academic performance of the students.

Research Question 2: What is the perception of JHS Social Studies learners on using flipped classroom model in teaching and learning Social Studies in the Aowin Municipality?

Having taken students through the flipped classroom, the study explored the perception of the students on the use of the flipped classroom in learning Social Studies. Most of the items measuring the perception of the students yielded a positive outlook for the flipped classroom. The study, however, revealed that students did not like the idea of doing homework in the classroom. This may be attributed to their acclimatisation to the traditional method as revealed by Rotellar and Cain (2016), where teachers sometimes punished learners for not doing their homework at home. This is in contradiction to the findings by Akuffo et al. (2019), who assert that student interaction in the flipped classroom provides an opportunity for them to be clear on certain issues perplexing them. A blog by Rohina (2018) also suggested that the flipped classroom prevents learners from frustrations they face at home in trying to do the homework assigned to them by their teachers and sees it as a great advantage for learners. However, the findings from the questionnaire given to the learners indicated otherwise.

The mean of means was calculated to determine the general perception of learners on the use of the flipped classroom. This yielded a mean of means of 3.56 out of four, which is an indication that learners have a positive perception of the flipped classroom in learning Social Studies in the Aowin

Municipality. This positive perception of learners spans from the idea of making notes from videos, having an opportunity to pause, rewind before proceeding as found out by Cabı (2018), having opportunities to solve practical problems in class, exposing them to other relevant technological and educational tools, just to mention but a few. The results from respondents are also in line with what González-Gómez et al. (2016) found out in their study of students' perceptions and emotions toward learning in a flipped General Science classroom that students have a positive perception of the flipped classroom. The positive perception found out from the study suggests that learners within the Aowin Municipality will fully embrace the concept of the flipped classroom in teaching and learning Social Studies in the Aowin Municipality.

Research Question 3: What challenges do JHS Social Studies learners face when using flipped classroom model to learn Social Studies within the Aowin Municipality?

Challenges are part and parcel of human activities. It is in the light of this that the study explored the challenges that students face in learning within the context of the flipped classroom. As seen in Table 12, 10 of the proposed challenges attracted the endorsement of the students while the remaining five items were dismissed as challenges associated with the flipped classroom. The findings revealed that the greatest challenges that learners face in using the flipped classroom to learn were not related to themselves but related to logistics and community service. This confirms a study that was carried out in the University of Ibadan that showed that internet connectivity, problems associated with downloading videos, power outages were the main challenges that learners faced in using the flipped classroom (Adedoja, 2016). The mean of means of

2.901 indicates that a lot of the learners using the flipped classroom agree that they face a lot of challenges in using the model to learn. These challenges range from logistics and community service through to content and timing of videos as revealed in literature (Adedoja, 2016; Cab1, 2018; Jeong et al., 2016; Kenney, 2019). In the light of these challenges, it is crucial to indicate that effective implementation of the flipped classroom is not solely the burden of the teacher. However, teachers hoping to use the flipped classroom in teaching Social Studies should ensure that they see to it that majority of the obstacles are removed.

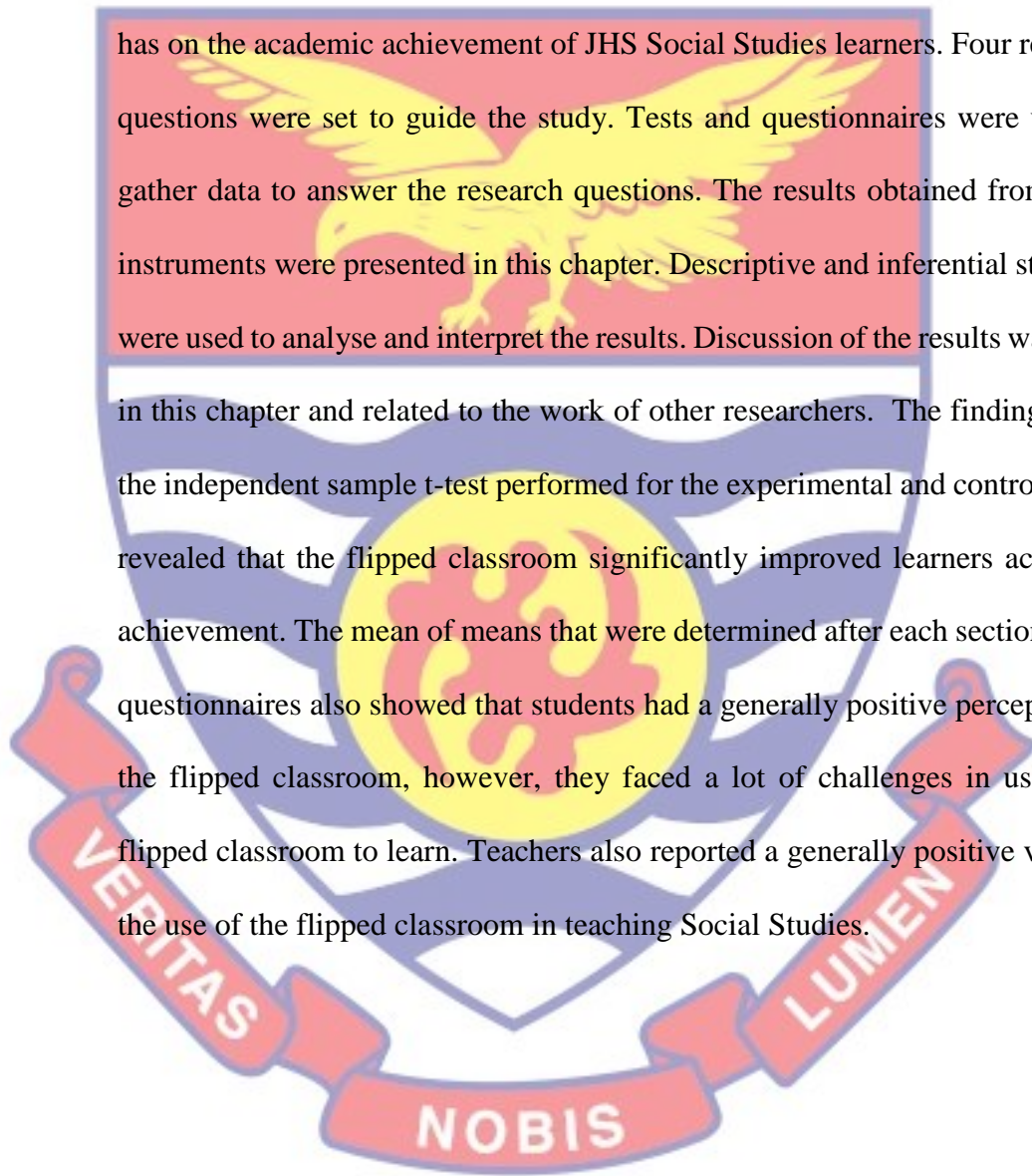
Research Question 4: What is the view of JHS Social Studies teachers in employing flipped classroom model to teach Social Studies within the Aowin Municipality?

The study also sought to find out if Social Studies teachers had positive or negative views on the use of the flipped classrooms in teaching Social Studies. The questionnaire administered to teachers revealed that teachers have positive views on the use of the flipped classroom in teaching Social Studies in the Aowin Municipality. The mean of means of 3.33 indicates that the majority of the teachers agreed to the items that were presented by the questionnaire. This is by no surprise as research findings on the views of teachers on the use of the flipped classroom in teaching has produced similar results (Coyne et al., 2018; Erdogan & Akbaba, 2018; Hajhashemi et al., 2016; Rachmawati et al., 2019). That notwithstanding, Gough, Dejong, Grundmeyer, Baron, and De Jong (2017) also reported that teachers do not see the flipped classroom as improving students academic achievement of the traditional method. This indicates that not all teachers fully embrace the concept of the flipped

classroom. In conclusion, the positive view that teachers have about the flipped classroom presupposes that they will willingly use the flipped classroom if the challenges associated with its use are overcome.

Summary

The study was conducted to find out the influences the flipped classroom has on the academic achievement of JHS Social Studies learners. Four research questions were set to guide the study. Tests and questionnaires were used to gather data to answer the research questions. The results obtained from these instruments were presented in this chapter. Descriptive and inferential statistics were used to analyse and interpret the results. Discussion of the results was done in this chapter and related to the work of other researchers. The findings from the independent sample t-test performed for the experimental and control group revealed that the flipped classroom significantly improved learners academic achievement. The mean of means that were determined after each section of the questionnaires also showed that students had a generally positive perception of the flipped classroom, however, they faced a lot of challenges in using the flipped classroom to learn. Teachers also reported a generally positive view on the use of the flipped classroom in teaching Social Studies.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Overview

This chapter presents the summary of the work, the key findings obtained from the analysis of the results, the conclusions and recommendations as well as suggestions for further studies.

Summary

The study's purpose was to find out if the flipped classroom model had any influence on the academic achievements of JHS Social Studies students in the Aowin Municipality. Four research questions were set to assist and direct the researcher to remain focused. The first research question sought to find out if the flipped classroom model had any influence on the academic achievements of Social Studies learners in the Aowin Municipality. To answer this research question, four hypotheses were developed and tested using the t-test tool in SPSS version 26. The second research question was to solicit the perceptions of learners on the use of the flipped classroom model in learning Social Studies. The third research question sought to obtain data on the challenges learners faced in using the flipped classroom in learning Social Studies within the Aowin Municipality. The last research question sought to find out about the views that Social Studies teachers have about the use of the flipped classroom in teaching Social Studies within the Aowin Municipality. The quasi-experimental research design was employed in the study. A sample of 110, comprising 100 students and 10 teachers, was used for the study. The students were grouped into control

and experimental group with each group having the same number of students. Test and questionnaires were the instruments that the researcher used to obtain data from respondents. Data gathered from respondents were analysed using frequency tables, means, standard deviations and t-tests. The results were discussed and related to the work of other researchers. Conclusions, recommendations and suggestions for further studies were also given.

Key Findings

The following findings were obtained from the analyses of the research questions and testing of the hypotheses:

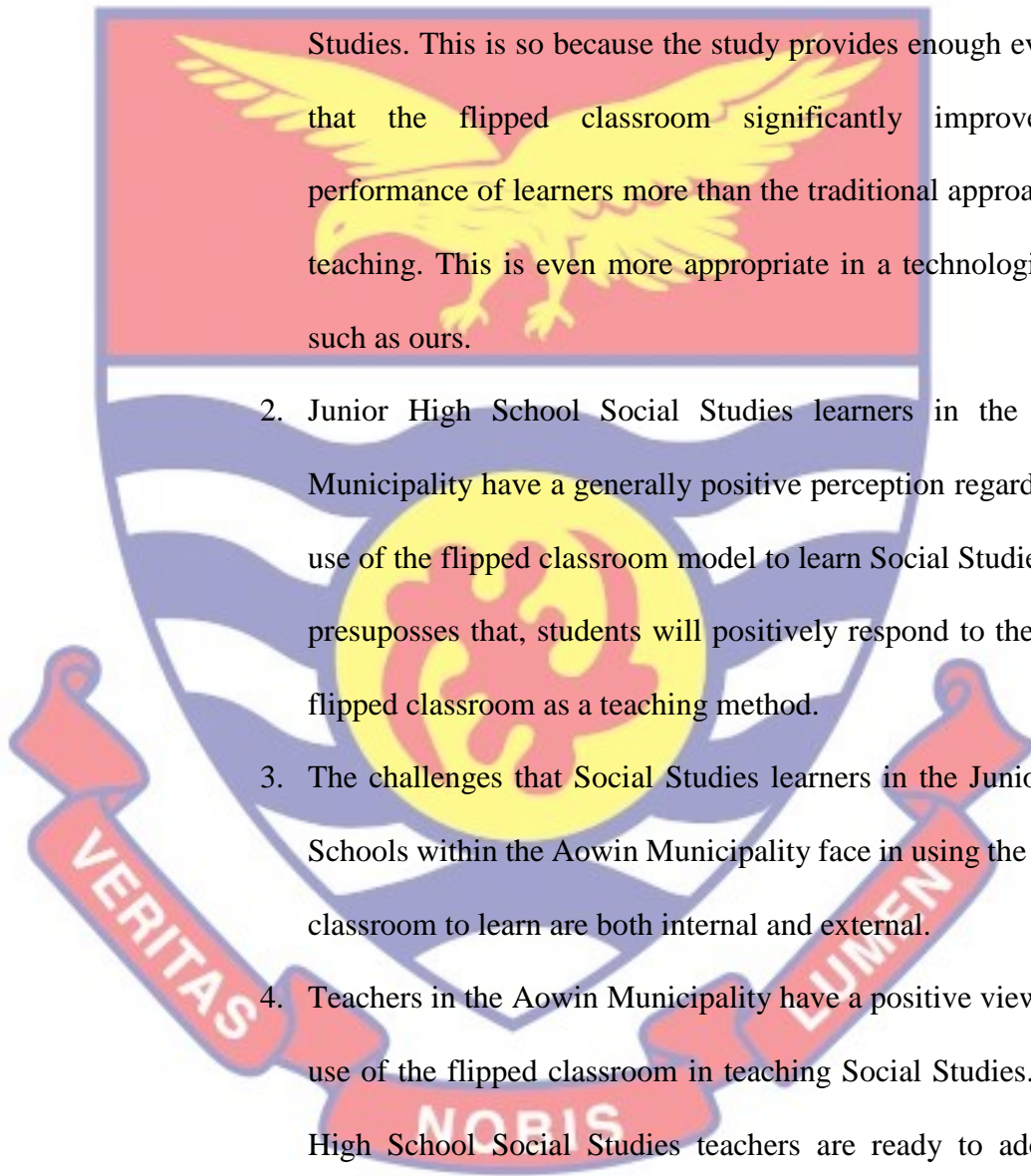
1. The study revealed that the flipped classroom significantly improved Social Studies learners' academic attainment as revealed by the results of the t-test producing a significant value of $p < .001$.
2. The research also found out that learners have a generally positive perception of the flipped classroom in learning Social Studies in the Aowin Municipality with a mean of means of 3.56.
3. It was also shown from the study that learners encounter several challenges when they employ the flipped classroom model to learn. Among such challenges included lack of data to access the internet, frequent light outs, lack of technological devices to access contents, difficulty in comprehending some of the materials given to them, and many others. This produced a mean of means of 2.9.
4. Lastly, the study revealed that teachers within the Aowin Municipality have positive views concerning using flipped classroom model in teaching Social Studies. Teachers' views produced a mean

of means of 3.33 which indicated that they had a positive view of the flipped classroom.

Conclusions

The study concludes on the basis of the findings that:

1. The flipped classroom is a very potent method of teaching Social Studies. This is so because the study provides enough evidence that the flipped classroom significantly improves the performance of learners more than the traditional approaches to teaching. This is even more appropriate in a technological era such as ours.
2. Junior High School Social Studies learners in the Aowin Municipality have a generally positive perception regarding the use of the flipped classroom model to learn Social Studies. This presupposes that, students will positively respond to the use of flipped classroom as a teaching method.
3. The challenges that Social Studies learners in the Junior High Schools within the Aowin Municipality face in using the flipped classroom to learn are both internal and external.
4. Teachers in the Aowin Municipality have a positive view of the use of the flipped classroom in teaching Social Studies. Junior High School Social Studies teachers are ready to adopt the flipped classroom model in their teaching provided challenges students face are eliminated.



Recommendations

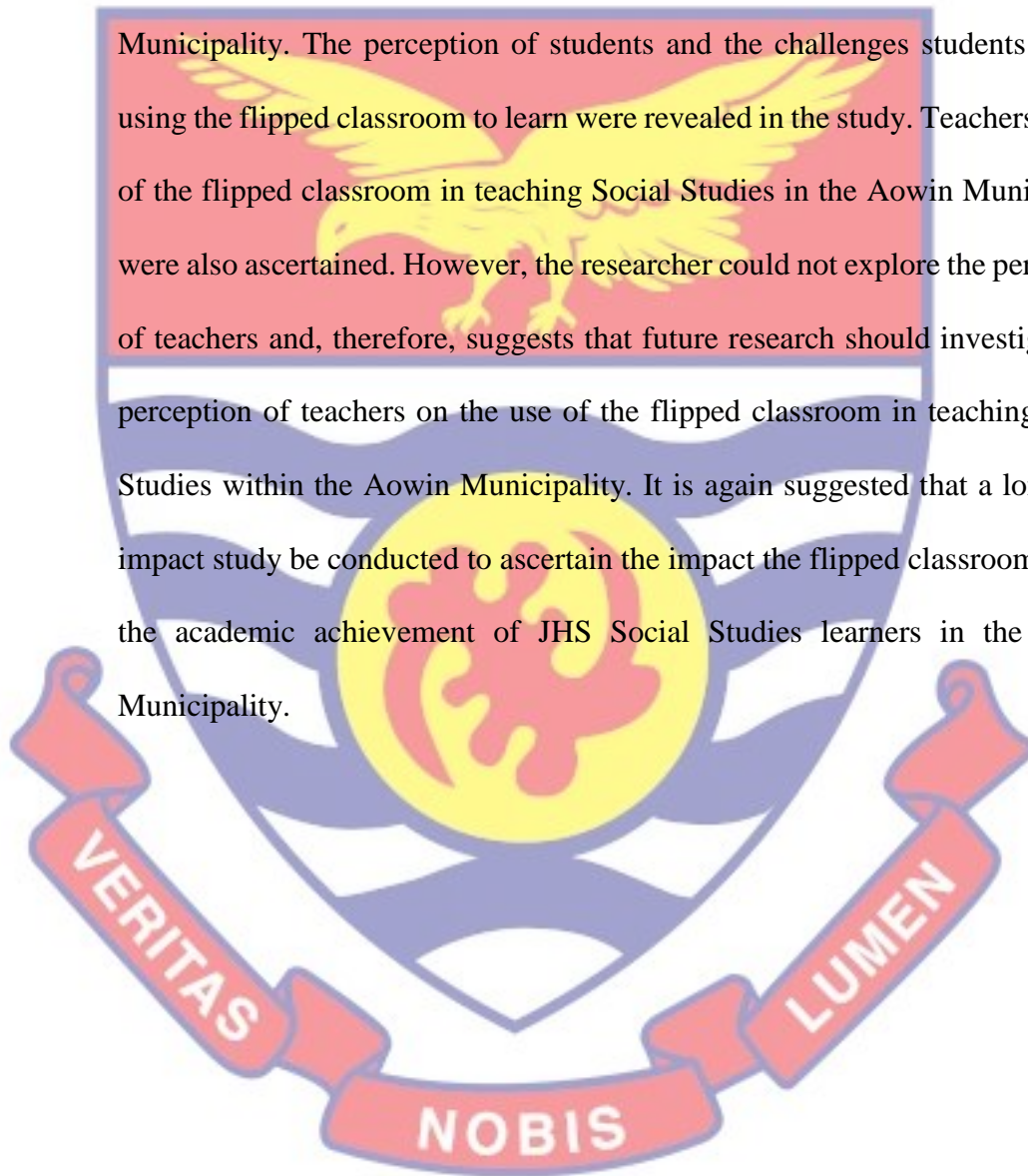
Based on the findings and conclusions drawn, the following recommendations are made for policy and practices:

1. School Improvement Support Officers and Headteachers should ensure that teachers use the flipped classroom to bring variations in lesson delivery so as to improve the academic achievements of learners. This calls for the Ghana Education Service to organise in-service training for Social Studies teachers on the use of the flipped classroom in teaching Social Studies.
2. Since learners have a general positive perceptions of the use of the flipped classroom, it is recommended that teachers use the flipped classroom as a teaching method while parents are also encouraged to provide their wards with the necessary support such as phones and data to facilitate students' learning.
3. Given that learners face frequent power outages during periods that they watch videos assigned to them by their teachers, it is recommended that government and the Electricity Company of Ghana should ensure that there is a constant flow of power to allow learners trying to use the flipped classroom to learn are without any hindrance.
4. Given that teachers have a positive view about using flipped classroom in teaching but lack devices needed to carry out the approach, it is recommended that government should provide technological devices to schools and teachers and ensure that

teachers employ the various technological devices at their disposal to the benefit of their students.

Suggestions for Further Studies

This study examined the influence flipped classroom has on the academic achievement of JHS Social Studies learners in the Aowin Municipality. The perception of students and the challenges students face in using the flipped classroom to learn were revealed in the study. Teachers' views of the flipped classroom in teaching Social Studies in the Aowin Municipality were also ascertained. However, the researcher could not explore the perception of teachers and, therefore, suggests that future research should investigate the perception of teachers on the use of the flipped classroom in teaching Social Studies within the Aowin Municipality. It is again suggested that a long term impact study be conducted to ascertain the impact the flipped classroom has on the academic achievement of JHS Social Studies learners in the Aowin Municipality.



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APPENDIX A

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

FACULTY OF EDUCATIONAL FOUNDATIONS

DEPARTMENT OF BASIC EDUCATION

Questionnaire for Students

Confidentiality statement

Dear Student,

This questionnaire aims at exploring the perception and challenges that learners face in using the flipped classroom in learning Social Studies at the JHS level.

The questionnaire seeks to solicit your opinions and concerns. Every response you provide would be of utmost importance to the researcher and would be used for academic purposes only. You are, therefore, assured that any information you provide will be treated with the confidentiality it deserves and your anonymity will be highly sustained.

Your co-operation is appreciated.

SECTION A: Demographic details of respondents

The following statements seek information about you. Please respond by ticking [✓] in the box the option you deem appropriate.

1. Sex

Male [] Female []

2. Please write your age in figures.....

3. Do you or any of your household members have a smartphone, desktop computer or laptop?

Yes [] No []

4. If yes, do you have internet connectivity?

Yes []

No []

5. Do you have a DVD/CD player or Television in your home?

Yes []

No []



SECTION B: Perception of learners on the use of the flipped classroom in learning Social Studies

Please read and tick [✓], where appropriate, whether you *Strongly Agree (SA)*, *Agree (A)*, *Disagree (D)* or *Strongly Disagree (SD)*.

What is the perception of learners in using the flipped classroom to learn Social Studies in the Aowin Municipality?

	Statement	Responses			
		SA	A	D	SD
6.	Watching videos and taking notes from them, contributes to my learning				
7.	I feel that trying my hands on the exercises posed in the videos help my learning				
8.	The practical problems I solve in class after watching videos at home contributes to my learning				
9.	I become attentive while watching a video or reading any material assigned to me by my teacher and that contributes to my learning				
10.	The videos or materials that I watch or read before coming to class help me to ask practical questions				
11.	When I solve problems in class with my friends, I get enough time at home to do my assigned tasks.				
12.	I wish all subjects will use this form of learning				
13.	I try my best to watch all or more than half of the videos prepared by my teacher.				
14.	I think I learn Social Studies better in a flipped classroom than in the conventional classroom				
15.	I get the opportunity to pause, rewind and become clear on concepts in the videos before I proceed				
16.	My interest in Social Studies has changed for the better because I can now reason along the ideas obtained from the videos I watch at home				
17.	Doing homework in class is better because I can ask my friends or my teacher for clarification on questions I am not clear				
18.	I only enjoy the flipped classroom when materials are prepared by my teacher himself				
19.	The teacher has enough time to explain issues to me when I approach him for clarity				
20.	Flipped classroom exposes me to relevant educational media that help me to study Social Studies				

SECTION C: Challenges learners face in using the flipped classroom to learn Social Studies.

Please tick, where applicable, whether you *Strongly Agree (SA)*, *Agree (A)*, *Disagree (D)* or *Strongly Disagree (SD)*.

What are the challenges learners face in using the flipped classroom to learn

Social Studies in the Aowin Municipality?

	Statement	Responses			
		SA	A	D	SD
21.	It becomes difficult to understand concepts clearly when the videos are prepared by a different person other than my teacher.				
22.	In some instances, I exhaust data mid-way through the watching of online videos.				
23.	Some of the videos are too long and make me lose focus.				
24.	Pre-class activities are too much and become a burden when I add to my household duties.				
25.	I do not get the opportunity to ask questions immediately when I am not clear on some issues.				
26.	Watching videos are boring and passive.				
27.	I do not get enough time to do other tasks assigned by different subject area teachers.				
28.	I do not enjoy watching the videos.				
29.	My relatives sometimes feel reluctant to let me use their devices to access information on the internet.				
30.	I do not get a good network to access the internet sites given by my teacher.				
31.	My household members feel I deprive them of their favourite television programmes when I use the television to watch the CDs given by my teacher.				
32.	Some of the words in the reading materials assigned to me are difficult to understand.				
33.	I am not given extra money to buy data for my online activities.				
34.	I find it difficult to make my notes when watching videos or reading material.				
35.	Frequent light outs in my village prevent me from watching videos most of the time.				

Thank you

APPENDIX B

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

FACULTY OF EDUCATIONAL FOUNDATIONS

DEPARTMENT OF BASIC EDUCATION

Questionnaire for Teachers

Confidentiality statement

Dear Teacher,

This questionnaire aims at exploring the views of teachers about using the flipped classroom in teaching Social Studies at the JHS level. The questionnaire seeks to solicit your views. Every response you provide would be of utmost importance to the researcher and would be used for academic purposes only.

You are, thus, assured that any information you provide will be treated with the confidentiality it deserves and your anonymity will be highly sustained.

Thank you for your co-operation.

The following statements seek information about you. Please respond by ticking [✓] in the box, the option you deem fitting.

SECTION A: Demographic details of respondents

1. Sex

Male []

Female []

2. Please indicate your age range.

21 – 30 []

31 – 40 []

41 – 50 []

above 50 []

3. Years of teaching Social Studies

1 - 5 years []

6 – 10 years []

above 10 years []

4. Have you heard of the flipped classroom as a teaching approach/model?

Yes [] No []

5. Have you tried using the flipped classroom in teaching?

Yes [] No []

SECTION B: Views of teachers on the use of the flipped classroom in

teaching Social Studies at the JHS level

Please tick, where appropriate, if you *Strongly Agree (SA), Agree (A), Disagree (D) or Strongly Disagree (SD)* to each of the declarations.

What are the views of teachers on the use of the flipped classroom to teach Social Studies at the JHS level in the Aowin Municipality?

	Statement	Responses			
		SA	A	D	SD
6.	Flipped classroom makes students learn better and score higher when used appropriately.				
7.	Flipped classroom provides a better opportunity to interact with students during class.				
8.	Flipped classroom makes students go to class more prepared.				
9.	Preparing videos and other materials for learners in a flipped classroom model helps teachers to learn more about the content.				
10.	Flipped classroom makes learners interact with technological tools, thus, connecting them globally.				
11.	Flipped classroom model motivates learners to learn.				
12.	Flipped classroom provides an opportunity for absent students to catch up with knowledge lost during their absence.				
13.	Flipped classroom enables positive student-student and student-teacher relationships.				
14.	Flipped classroom makes the teacher cover a wide range of content areas.				
15.	Flipped classroom promotes critical thinking in students.				
16.	Flipped classroom make students learn at their pace.				
17.	Preparing videos or materials for learners in a flipped class is time-consuming.				

18.	Flipped classroom adds an extra burden to the teacher.				
19.	There is no guarantee that learners will watch or read materials assigned to them.				
20.	The flipped classroom is good for students in the cities.				

Thank you



APPENDIX C

UNIVERSITY OF CAPE COAST

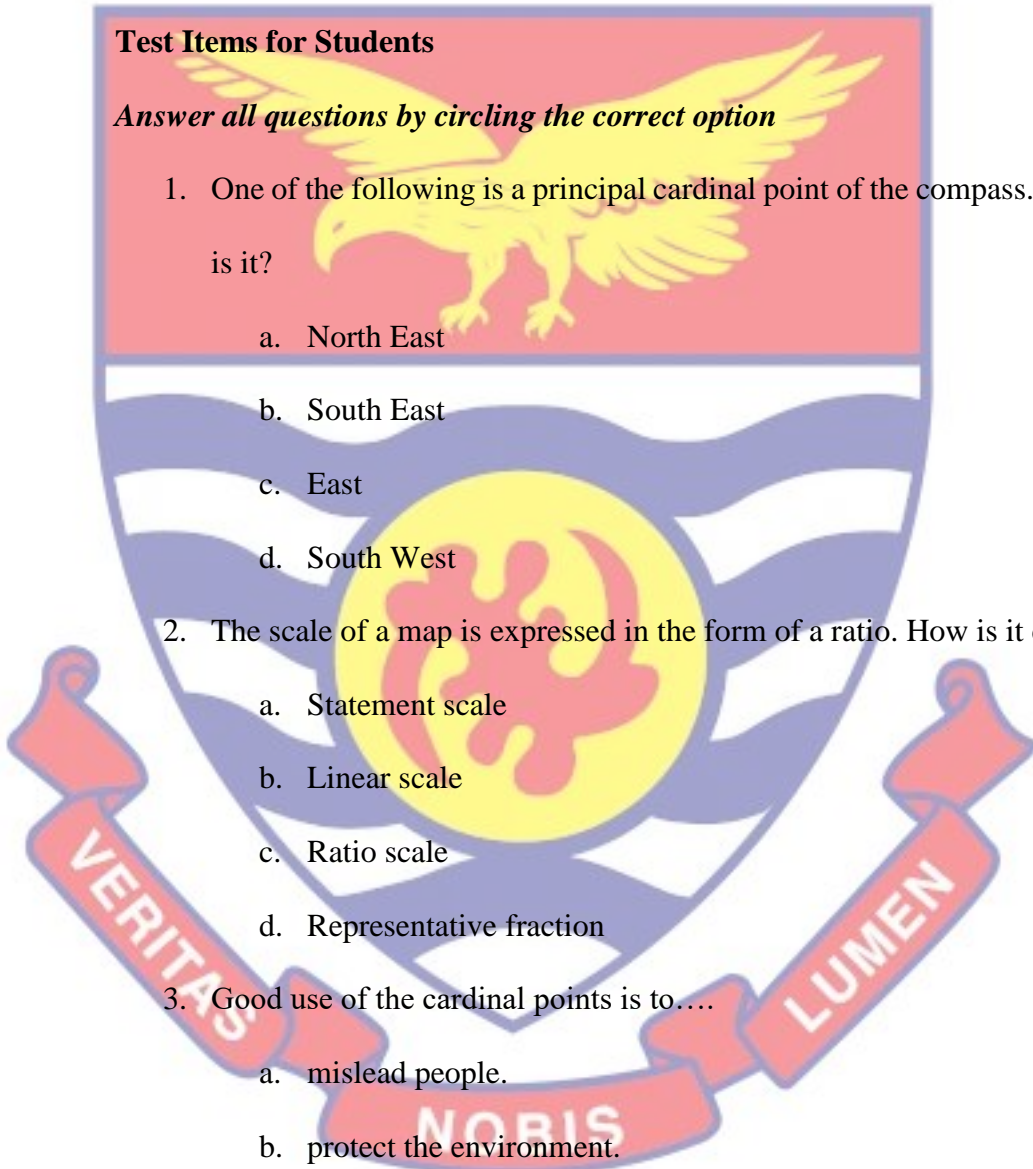
COLLEGE OF EDUCATION STUDIES

FACULTY OF EDUCATIONAL FOUNDATIONS

DEPARTMENT OF BASIC EDUCATION

Test Items for Students

Answer all questions by circling the correct option

- 
1. One of the following is a principal cardinal point of the compass. Which is it?
 - a. North East
 - b. South East
 - c. East
 - d. South West
 2. The scale of a map is expressed in the form of a ratio. How is it called?
 - a. Statement scale
 - b. Linear scale
 - c. Ratio scale
 - d. Representative fraction
 3. Good use of the cardinal points is to....
 - a. mislead people.
 - b. protect the environment.
 - c. make life comfortable.
 - d. give direction.
 4. Peaceful co-existence among individuals in society can be promoted through

- a. reconciliation
- b. socialisation
- c. sympathy
- d. patriotism

5. The shared value which will promote unity among Ghanaians is

- a. loyalty
- b. humility
- c. hospitality
- d. tolerance

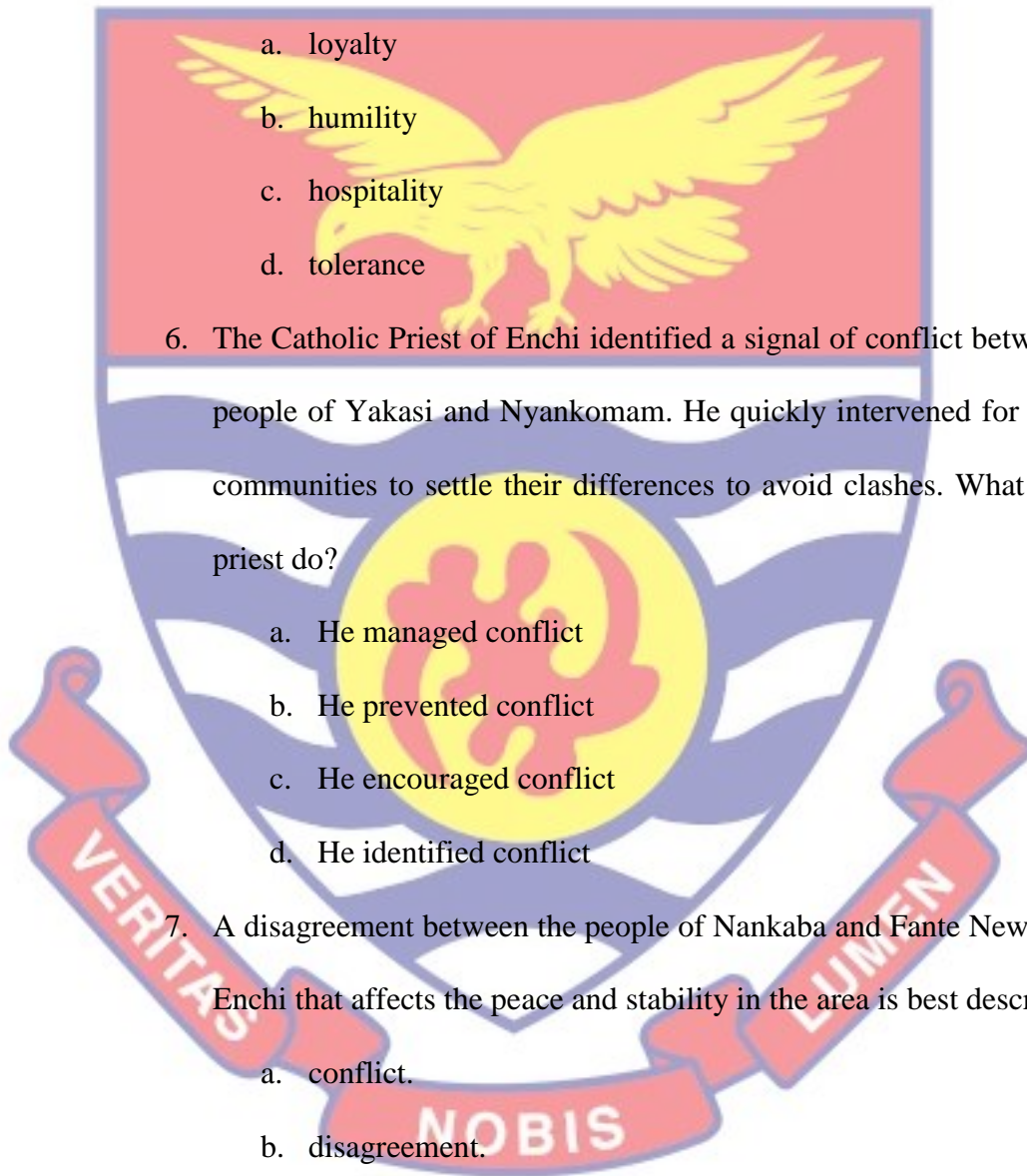
6. The Catholic Priest of Enchi identified a signal of conflict between the people of Yakasi and Nyankomam. He quickly intervened for the two communities to settle their differences to avoid clashes. What did the priest do?

- a. He managed conflict
- b. He prevented conflict
- c. He encouraged conflict
- d. He identified conflict

7. A disagreement between the people of Nankaba and Fante Newtown in Enchi that affects the peace and stability in the area is best described as

- a. conflict.
- b. disagreement.
- c. disturbances.
- d. instability.

8. Universally accepted symbols used to represent landmarks on a map are called



- a. national symbols.
- b. conventional signs.
- c. conversational signs.
- d. symbols of national unity.

9. On a map, a symbol is indicated as **Fm**. What does this symbol represent?

- a. Football meeting place
- b. Family meeting
- c. Farm
- d. Foreign ministry

10. One key difference between a map and a sketch is that

- a. a map is not drawn to scale but a sketch is drawn to scale.
- b. a map is drawn to scale but a sketch is not drawn to scale.
- c. the school cannot be represented on a map but can be sketched.
- d. a sketch is small but a map is large.

11. Irene and Rita are two siblings that live in Mr Okutu's house. Irene likes to take rice as lunch while Rita likes to take Fufu as lunch. This has led to disagreements between the two as far as lunch is concerned. What type of conflict exists between the two?

- a. Intra-personal conflict
- b. Intra-group conflict
- c. Inter-group conflict
- d. Inter-personal conflict

12. Maclean Age is a student at Fawokabra D/A JHS. When he woke up one day, he struggled to choose whether to go to school or go to the farm.

What type of conflict did Maclean Age experience?

- a. Intra-personal conflict
- b. Intra-group conflict
- c. Inter-group conflict
- d. Inter-personal conflict

13. The conflict between the people of Sewum and Amonie restricted trading activities between the two villages. This led to an increase in the price of goods and services in the two villages. What effect did this conflict bring?

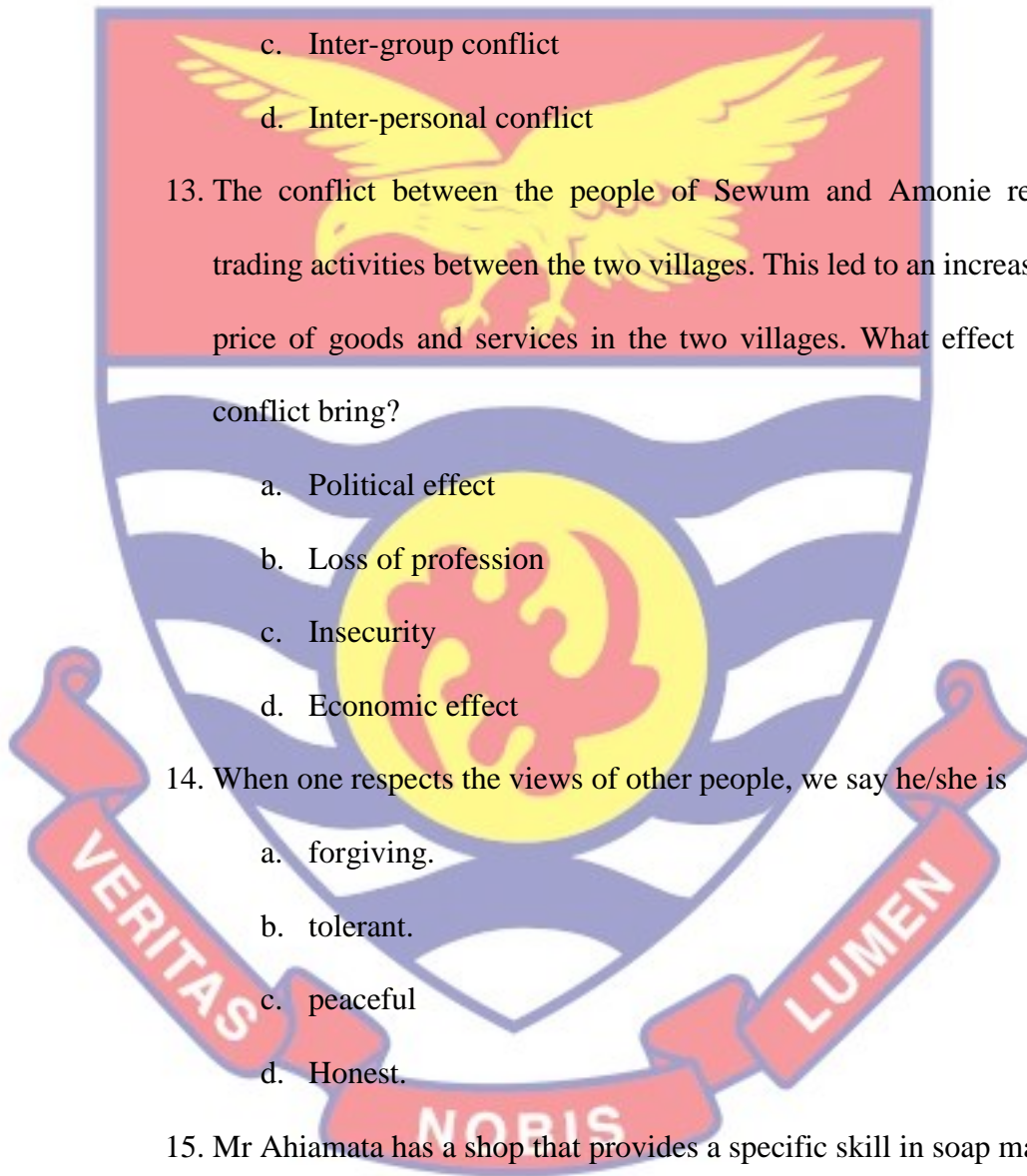
- a. Political effect
- b. Loss of profession
- c. Insecurity
- d. Economic effect

14. When one respects the views of other people, we say he/she is

- a. forgiving.
- b. tolerant.
- c. peaceful
- d. Honest.

15. Mr Ahiamata has a shop that provides a specific skill in soap making to everyone who goes there. What services does Mr Ahiamata's shop provide?

- a. Training services
- b. Educational services



- c. Productivity services
- d. Developmental services

16. Mrs Abiaw produces large goods with the resources she is given within a short period. Mrs Abiaw is said to be

a. ineffective.

b. effective.

c. inefficient.

d. efficient.

17. One way to improve productivity in the workplace is to

a. allow workers to do what they like.

b. plan and set targets.

c. make workers work at any time of the day.

d. call workers to your office one after the other.

18. All the following are advantages of technology except

a. speeding up work.

b. making work more complicated.

c. making work done efficiently.

d. minimising drudgery.

19. The output per man-hour is described as

a. production.

b. training.

c. productivity.

d. education.

20. Teachers in Nkwanta M/A JHS meet three times a week to discuss their welfare and the way forward of the school. During their meetings, they

break classes and use almost three hours for their meetings. The behaviour of teachers in the school can be described as

- a. highly productive
- b. extremely productive
- c. more caring
- d. counter-productive



Thank you


APPENDIX D

Letter of Introduction from Department of Basic Education

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF BASIC EDUCATION

Telephone: +233-(0)3321 33379
Cables: University, Cape Coast
Email: basicedu@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA



Our Ref: DBE/32/V.3/136 8th June, 2021

Your Ref:

Dear Sir/Madam,

LETTER OF INTRODUCTION

The bearer of this letter George Ebanyenle Ackah, is an M.Phil student at the Department of Basic Education, University of Cape Coast.

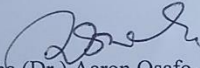
He is undertaking a study on “**Influencing of the flipped classroom model on the Academic Achievement of JHS Social Studies learners in the Aowin Municipality**”.

In connection with this, he needs to collect data. The study is academic in purpose and data collected will be treated as confidential.

We would therefore be grateful if you could give him the necessary assistance.

Thank you.

Yours faithfully,



Nana (Dr.) Aaron Osafo-Acquah
HEAD OF DEPARTMENT
DEPARTMENT OF BASIC EDUCATION
UNIVERSITY OF CAPE COAST
CAPE COAST

APPENDIX E

Ethical Clearance from Institutional Review Board

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES-ERB/ucc.edu/VS/21-65  Date: 2nd July, 2021
Your Ref:

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

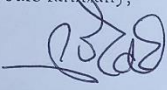
The bearer, George E. Adkah, Reg. No. EE/BEP/19008 is an M.Phil. / ~~Ph.D.~~ student in the Department of Basic Education in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. He / ~~She~~ wishes to undertake a research study on the topic:

Influence of the flipped classroom model on the academic achievement of JHS Social Studies learners in the Arowin Municipality.

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed his/~~her~~ proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/~~her~~ study. The ERB would be grateful if you would give him/~~her~~ the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,



Prof. Linda Dzama Forde
(Secretary, CES-ERB)

Chairman, CES-ERB
Prof. J. A. Omotosho
jomotosho@ucc.edu.gh
0244784739

Vice-Chairman, CES-ERB
Prof. K. Edjah
kedjah@ucc.edu.gh
0244742357

Secretary, CES-ERB
Prof. Linda Dzama Forde
lforde@ucc.edu.gh
0244786680

Appendix F

Test Scores for Groups

Experimental Group				Control Group		
S/N	Participant ID	Pre-test Score	Post-test Score	Participant ID	Pre-test Score	Post-test Score
1	EGP1	15	18	CGP1	8	15
2	EGP2	13	20	CGP2	13	15
3	EGP3	15	18	CGP3	9	16
4	EGP4	14	16	CGP4	7	15
5	EGP5	13	19	CGP5	7	13
6	EGP6	12	17	CGP6	3	12
7	EGP7	12	16	CGP7	9	13
8	EGP8	3	14	CGP8	2	7
9	EGP9	5	10	CGP9	5	8
10	EGP10	10	18	CGP10	7	11
11	EGP11	12	17	CGP11	9	13
12	EGP12	10	15	CGP12	4	12
13	EGP13	6	13	CGP13	6	12
14	EGP14	7	16	CGP14	6	10
15	EGP15	8	17	CGP15	9	13
16	EGP16	8	14	CGP16	7	11
17	EGP17	8	16	CGP17	6	10
18	EGP18	9	17	CGP18	4	7
19	EGP19	7	11	CGP19	6	9
20	EGP20	14	19	CGP20	11	13
21	EGP21	9	16	CGP21	6	9
22	EGP22	11	15	CGP22	7	11
23	EGP23	9	13	CGP23	9	14
24	EGP24	9	15	CGP24	6	10
25	EGP25	5	16	CGP25	6	9
26	EGP26	5	13	CGP26	4	9
27	EGP27	8	12	CGP27	2	7
28	EGP28	11	17	CGP28	4	7
29	EGP29	12	16	CGP29	8	11
30	EGP30	11	17	CGP30	6	10
31	EGP31	13	17	CGP31	8	15
32	EGP32	7	14	CGP32	7	9
33	EGP33	5	13	CGP33	5	10
34	EGP34	6	15	CGP34	5	9
35	EGP35	5	13	CGP35	9	13

36	EGP36	3	14	CGP36	3	8
37	EGP37	6	13	CGP37	4	7
38	EGP38	13	18	CGP38	7	10
39	EGP39	14	19	CGP39	10	13
40	EGP40	4	11	CGP40	8	11
41	EGP41	10	17	CGP41	9	11
42	EGP42	6	13	CGP42	11	14
43	EGP43	6	17	CGP43	4	9
44	EGP44	5	14	CGP44	5	10
45	EGP45	11	18	CGP45	4	9
46	EGP46	11	15	CGP46	7	11
47	EGP47	13	18	CGP47	2	8
48	EGP48	8	14	CGP48	6	10
49	EGP49	12	16	CGP49	6	11
50	EGP50	8	17	CGP50	9	16

