UNIVERSITY OF CAPE COAST

IMPACT OF COOPERATIVE LEARNING ON PERFORMANCE OF ECONOMICS STUDENTS IN SENIOR HIGH SCHOOLS IN GHANA: A QUASI EXPERIMENTAL STUDIES IN THE EASTERN REGION

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Thesis submitted to the Department of Business and Social Sciences Education, Faculty of Humanities and Social Sciences Education, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Curriculum and Teaching

SEPTEMBER 2023

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own 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 the thesis laid down by the University of Cape Coast.

Supervisor's Signature …… Date…….

Name: …… ……...

ABSTRACT

The study assessed the impact of cooperative learning on performance of Economics students in senior high school in Ghana. A quantitative approach was employed, utilizing a quasi-experimental design that included pre-tests and post-tests with control groups. The study comprised of 164 economics students (19 in the business class and 145 in the general arts classes). A 50-item achievement test and a 29-item questionnaire were used to collect the data. The experimental group was taught using the think-pair-share and Jig-saw techniques for six weeks each, whereas the control group was taught using traditional teacher-centred method for 12 weeks. Data analysis involved descriptive statistics (frequency, percentages, mean, and standard deviation) and inferential statistics (independent sample t-test and paired sample t-test). There was no statistically significant difference in the pre-test achievement mean scores between the experimental and control groups. However, a statistically significant difference emerged in the post-test achievement mean scores, favouring experimental group, indicating their superior performance. This indicates that cooperative learning (CL) strategies, specifically jigsaw and think-pair-share, significantly enhanced students' academic performance in economics. Also, students in the experimental group held positive perceptions of CL, with no discernible gender-related differences. In conclusion, the study found that Jigsaw and think-pair-share are effective strategies for enhancing students' learning in economics. As a recommendation, economics educators are encouraged to incorporate CL strategies, especially the jigsaw and think-pair-share models, into their teaching methods to boost the academic performance of economics students.

KEYWORDS

Cooperative learning (CL)

Economics

Ghana

Ghana Education Service (GES)

Jigsaw

Ministry of Education (MOE)

Senior high school (SHS)

Think-pair-share

West African Secondary School Certificate Examinations (WASSCE)

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DEDICATION

To my family

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LIST OF ACRONYMS

AC	Academic Controversy
CL	Cooperative Learning
EFL	English as Foreign Language
GDP	Gross Domestic Product
GES	Ghana Education Service
GI	Group Investigation
IRB	Instituitional Review Board
LT	Learning Together
MOE	Ministry of Education
NaCCA	National Council for Curriculum and Assessment
SHS	Senior High School
SPSS	Statistical Package for Social Sciences
STAD	Student-Team-Achievement-Division
STLM	Student Team Learning Method
TGT	Team-Games-Tournament
UCC	University of Cape Coast
WAEC	West Africa Examination Council
WASSCE	West Africa Secondary School Certificate Examination
ZPD	Zone of Proximal Development

CHAPTER ONE

INTRODUCTION

Education aims to promote holistic development in learners (Dada, 2016). From his point of view, education must inculcate an all-round development in learners in aspects such as intellectual, physical, moral and emotional fortitudes for them to assume their proper place as responsible members in the society. Since education covers all facets of human endeavours, many societies have established specific institutions that employ various ways to foster effective and acceptable learning which must lead to excellent academic performance. However, one key issue which must be addressed is whether or not the teachers' teaching and learning activities impacts on students' academic performance.

In Ghana, implementing the free senior high school policy has led to huge expenditure on the nation's budget. However, the trend of students' achievements over the years in Ghana, despite huge investment in education, seems not to be encouraging. According to Abreh, Owusu, and Amedahe (2018), key factors that result in poor performance by candidates at the WASSCE include; inadequate qualified teachers to handle various subjects, use of inappropriate approaches or methodologies to teaching and learning of respective subjects, limited time to enact and complete curriculum, and inability on the part of teachers to complete between 50-70% of the curricula. It is for these reasons and other unidentified factors that the researcher wants to employ contemporary methods of teaching and learning, such as cooperative learning (CL) to determine whether it could lead to an improvement in performance of students during the examination.

Background to the Study

The idea of teaching and learning of economics at pre-tertiary level was supported and promoted by scholars such as Sir Alexander Carr-Saunders and E.R. Emmett with the argument that the teaching of economics at the pre-tertiary level could provide an introduction to economics for individuals who aspire to study it further at the university or polytechnic (Bukari & Abra, 2017). Consequently, through the Ghana Education Service (GES) in 1969, economics was introduced into Ghana's Senior High School (SHS) curriculum as an elective subject. The rationale for introducing economics as an elective subject into the curriculum of the SHS includes providing intellectual training, vocational training, and preparation for citizenship, among others (Curriculum and Research Development Division, 2010).

Although there has been a rise in number of students offering the subject, achievement in economics at the pre-tertiary level has not been good over the years (Adu, 2012). The economics syllabus has an element of mathematics incorporated in it. This is explicit in topics such as national income accounting and determination, the multiplier, theory of consumer behaviour, theory of the firm, theory of cost, production, and elasticity of demand and supply. As a results of carry-over effect of the fear of mathematics by most SHS students, majority of students who study economics at this level tend to extend a negative attitude towards the study of these mathematics-inclined topics in economics, leading to poor students' achievement and performance at the WASSCE (Adu & Galloway, 2015).

Low level of teacher-student interaction, learners' inability to pose questions and teacher-centred methodologies in teaching economics were among the causes identified to contribute to the poor achievement and performance in Economics. Therefore, the question is, how can students overcome the phobia of reading challenging topics in Economics to enhance their academic performance?

Most students find it challenging to learn when topics are difficult in nature and may require assistance from their classmates to understand them (Felder & Brent, 2006). Adu and Adeyanju (2013), also believed that to succeed in economics studies at the SHS, students should be allowed to speak and reason economically to build their confidence to solve economic problems and this can be achieved through cooperative learning. With this in mind, there have been debates over the years concerning the most effective pedagogical techniques in education. Others contend that even if structures are well recognized in the discipline, finding them makes sense for the pupils even though some people believe in forcing knowledge upon students (Lansley & Ornstein, 2000).

Currently, there appears to be a shift towards team or cooperative learning since researchers have concluded that cooperative learning (CL) in teaching is a way of improving intellectual capability of students. With CL, students' study in groups with sometimes the teacher's guidance to accomplish similar objectives using social skills. Several studies indicate that CL can improve students' performance in respective subject areas, providing long-term memory, positive attitude, social skills and self-concept. Consequently, there should be more

opportunities for group collaboration, to create solutions through discussions, and problem-solving activities (Dale, Nasir, & Sullivan, 2005; Asare, 2016).

Several economics education educators embarked on several research using CL and found improvements in students' economics achievement (Adu & Adeyanju, 2013). In research conducted by Shimazoe and Aldrich (2010), the adoption of a CL strategy has a number of advantages for students, such as encouraging in-depth learning of materials, improving grades as compared to personal learning, learning civic values and social skills, emulating higher-order critical thinking skills and promoting personal growth among others. There are several designs or models under cooperative learning, notable among them include the jigsaw and the think-pair-share methods. According to Marburger (2005) and Sahin (2010), the Jigsaw and think-pair-share models are among the CL strategies suitable for the teaching and learning of economics. Researchers such as Sahin (2010), Gull and Shehzad (2015), Usman, Muslem, and Basyah (2018) and Akanmu (2019) conducted studies using the think-pair-share design and found significant improvement in students' academic performance. By making inferences from the above research, it seems a cooperative way of learning specifically employing the think-pair-share and jigsaw models could help improve the poor students' performance in economics at SHS in Ghana and elsewhere in the world.

However, learners' attitudes, views and behaviours are key determinants of the success of such an instructional method (Farzaneh & Nejadansari, 2014). Taking these into account, the study sought to assess the impact of cooperative learning on Economics students' performance in SHS in Eastern Region, Ghana.

Statement of the Problem

Economics is a crucial subject since it empowers individuals, businesses and governments to make informed decisions. It is taught as an elective subject in SHS, worldwide. According to Nazeer (2006), in preparing students for numerous school certificate programmes, economics is taught as a separate subject for exams. Additionally, it has been incorporated into and taught through social, personal, career educational programmes and other subjects via subject permeation (Jephcote as cited in Wach, 2014). Despite the fact that polytechnics and universities provide economics courses, SHS is said to offer the finest potential for enhancing economic literacy of a country's youth (Caropreso & Haggerty, 2000).

Teaching economics at this school level seems to be vital for the development of learners' economic understanding. Despite the benefits associated with learning Economics and the increasing enrollment of students at the SHS, performance appears to be low (Adu, 2012). The Chief Examiners report between the period 2017 to 2020 suggest a poor performance in Economics by students. In the WASSCE (2017), findings indicate that, only a few of candidates out of the entire candidates who sat for the Economics examination during the WASSCE that year attempted the data response question on the Economics topic; National Income Accounting and Determination. Out of the few candidates who attempted it, most deviated the question with a small number of candidates getting it right (p. 156). In 2018, the Chief Examiners report showed that, "the performance of candidates was lower than the previous year" (p. 169). However, in 2019, "the performance by candidates at the WASSCE with respect to the subject improved, compare to

previous year according to the chief examiners report" (p. 158), but "few candidates performed creditably, whiles the performance of majority of the candidates was below average" (Chief Examiners report, 2020, p. 83).

Also, in an appraisal on the trend of students' performance in the WASSCE amongst member countries including Ghana, Bello and Oke (2015), observed that less than 57% of candidates had credit or better in economics. However, a review of literature on economic education proposes that many regions of the world appear to have relatively little research on how economics is taught and learned in schools (Jephcote as cited in Wach, 2014). Over the past few decades, little focus has been placed on improving teaching and learning in economics (Walstad, Rebeck, & Butters, 2013).

These observations might probably be the reasons why poor performance in economics has become a pattern in SHS, in most African countries including Ghana as observed by Bello and Oke (2015), Adu (2012) and Adu and Galloway (2015). A study conducted by Kwaah (2011), on the topic "students' and teachers' perceived difficulties with senior high school economic topics in central region, Ghana" indicated that 59.6% out of 354 students, affirmed that the topic 'National Income Accounting' is "difficult to understand" followed by "International Trade" with 45% out of the total sample size. Other topics that posed challenges according to Kwaah (2011), included "Market Structures", "Theory of demand" and "Theory of production" (pp.71-72). This observation by Kwaah highlights two major obstacles which might probably be the cause of the poor economics achievement at the WASSSCE by students; some topics pose challenge to both learners and their

facilitators and also poor approach or methodology to the teaching and learning of those challenging topics.

As a result, over the past few years, concerns about the impact of instructional techniques on students' performance have grown. Additionally, criticisms of the inadequate knowledge and skills amongst secondary school graduates as well as their incapacity to either apply classroom knowledge to real-life situations or communicate effectively at work have also been made (Becker, 2000). Building from the background of the study, the researcher wants to employ CL design in the teaching and learning of Economics to ascertain if performance of students in the subject at the SHS could improve.

In Nigeria, Adu and Galloway (2015) conducted quasi-experimental research on the effect of CL on students' achievement in economics in two senior high schools in Lagos on students' achievement and attitude. The result showed that, CL had a positive impact on students' achievement in economics. Similar research was conducted by Akanmu (2019), at the same setting and found significant improvement in students' performance. However, in Ghana, there seem to be little or no work done concerning this method of instruction in the SHS. There is hence a geographical and methodological gap that needs to be filled.

There have been studies on impact of CL on both teaching and learning, and students' attitude in other parts of the world but mostly focused at the tertiary level and focused on other subjects, not economics. Notable among these researches on CL include; White, Lloyd, Kennedy, & Stewart (2005), Dale et al. (2005), Gubbad and Mohammed (2010), Ning (2013), Opdecam, Everaert, Keer, & Buysschaert,

(2012), Grech, (2013), Farzaneh & Nejadansari, (2014), Reda (2015), Asare (2016), among others.

It is for this reason the current study seeks to assess the impact of CL on students' performance in economics in SHS in Ghana through a quasi-experimental design in the Eastern Region.

Purpose of the Study

The study assessed the impact of cooperative learning (CL) on students' performance in senior high school Economics.

Research Objectives

Precisely, the study's objectives were to:

1. assess students' perceptions of the use of CL strategies in economics.
2. determine whether there is difference in pre-test achievement mean scores among economics students in control group and those in experimental group.
3. examine whether there is difference in post-test achievement mean scores among economics students in the control group and those in experimental group.
4. assess whether there is difference in the pre-test and post-test achievement mean scores among economics students in the experimental group.
5. determine whether there is gender difference in students' perceptions of the use of CL strategies in Economics

Research Question

1. What is the perception of students towards the use of CL strategies in Economics?

Research Hypotheses

H_o 1: There is no statistically significant difference in pre-test achievement mean scores among economics students in the control group and those in the experimental group.

H_o 2: There is no statistically significant difference in post-test achievement mean scores among economics students in control group and those in the experimental group.

H_o 3: There is no statistically significant difference in pre-test and post-test achievement mean scores among economics students in the experimental group.

H_o 4: There is no statistically significant gender difference in students' perceptions concerning the use of CL strategies in economics.

Significance of the Study

The study intends to provide in-depth information on the impact of CL on students' performance in economics and to explore students' perceptions regarding such an instructional method of the subject to various stakeholders concerning SHS education in Ghana, like Ministry of Education (MOE), Ghana Education Service (GES), students, teachers and parents. The MOE which has an obligation of formulating educational policies for the country could give a directive as a policy decision to the GES at both the regional and the district levels to organize

workshops for both heads of senior high schools and teachers by sensitizing them on the need and effectiveness of encouraging a cooperative way of learning among students.

Teachers who teach economics in the SHS in Ghana would have adequate and well-informed information as to whether to keep on with the most used teacher-centered methodologies in teaching and learning of economics at SHS or encourage use of a CL among students as a way of improving performance in economics. Farzaneh and Nejadansari (2014) observe that, one-way students become stakeholders in their learning is for teachers to be facilitators in the learning process, providing students with direction and refraining from being a fountain of knowledge, while, pupils passively write notes and barely asking questions. Lastly, the research would provide a foundation for further study and contribute to the existing literature on CL as a teaching and learning technique for economics at the SHS level.

Delimitation

The study was set to examine the impact of CL strategies on students' academic performance in the SHS in Atiwa West district. Also, the study was delimited to Jig-saw and think pair-share CL strategies. The study was delimited to all Form 2 Economics students in Kwabeng SHS, in the Atiwa West district of the Eastern region of Ghana.

Limitations

Every research conducted has its own setbacks and this study is no exception. The research design for the study was quasi-experimental which

presents considerably further threat to internal validity as compared to true experiment. Here, the researcher does not randomly assign participant to a group, hence, potential threats of selection, maturation, morality as well as interaction of selection with other possible threats. The experimental and control groups were randomly selected based on the pre-existing classes to mitigate the treat to internal validity. Additionally, when pretest-posttest design is used, other threats of history, instrumentation, testing and regression may also ensue (Creswell 2012, pp. 310-311). Pre-testing was conducted to ascertain that the experimental and control groups were homogenous in terms of students' economic performance before the intervention to mitigate these threats and improve the external validity of the study findings.

Finally, since the instrument (questionnaire) which was used to collect the data on students' perception of CL methods in teaching economics, was a self-response measure and it is possible that some students could have provided socially desirable responses which could affect the validity of the results. This was mitigated by assuring the participants of their confidentiality and anonymity in participating in the study.

Organisation of the Study

The study was structured into five chapters, each dedicated to different aspects of the research. In Chapter One, there is an exploration of the study's background, statement of the problem, purpose, research objectives, research questions, significance, delimitation, limitations, definitions of key terms, and an overview of the organisation of the study. Chapter Two delves into the relevant

literature, encompassing both theoretical and empirical studies, along with the establishment of a conceptual framework. Moving on to Chapter Three, it is focused on the research methodology, covering the research paradigm, design, setting, population, sample selection, research instruments, validity and reliability testing, data collection procedures, and data analysis methods. Chapter Four is dedicated to presenting and discussing the obtained data and their results. Finally, in Chapter Five, the study concludes with a summary, draws conclusions based on its findings, provides recommendations, and suggests directions for future research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews relevant literature on the impact of cooperative learning (CL) on students' performance in senior high school Economics. The chapter is partitioned into both theoretical and empirical perspectives. Theoretical review focuses on Vygotsky's Cognitive Development Theory (1978), Piaget's Cognitive Development Theory (1932) and the Social Interdependence Theory (1900s) and how they relate to CL. The conceptual review focuses on relevant concept of CL. Finally, the empirical studies focus on studies related to the current study phenomenon, conducted by other researchers. The empirical review was grouped based on research questions and hypotheses.

Theoretical Review

Three theories were used to explain how CL strategies can be used as an instructional strategy to improve learners' academic performance in Economics. These are explained below.

Vygotsky's Cognitive Development Theory (1978)

Vygotsky (1978) theory of cognitive development suggests knowledge as a social construction from learning through cooperative effort. That is, to him, all learning and development framework is based on social interaction. He expressed that;

> "*An essential feature of learning is that it creates the zone of proximal development (ZPD), that is learning awakens a variety of internal*

> *development processes that are able to operate only when the child or learner is interacting with people in his environment and in cooperation with his peers. Once these processes are internalized, they become part of the child's independent developmental achievement*" (Vygotsky, 1978; p. 90).

An inference from his statement connotes that learners must actively engage in learning process instead of becoming passive recipient of knowledge, seen in traditional teacher-centered method of transmitting knowledge. Applying this principle to teaching and learning of economics at SHS, learners must be active in the learning of economics topics especially challenging ones. They can achieve this by asking relevant and leading questions from their peers who are quite knowledgeable in those topics and sometimes from their facilitators or teachers in order to enhance their understanding in those topics. Teachers must incorporate a CL style in their teachings which might probably contribute greatly to an improvement in performance in Economics at the WASSCE.

Wink and Putney (2002), identified three key assumptions underlying Vygotsky's cognitive theory which are: First, social interaction is key in cognitive development with respect to what is learnt as well as when and how learning occurs. That is for learning to be effective leading to positive results, there is the need for social interaction or cooperation among students as well as their teacher who serves as a facilitator, instructor or guide.

Besides, cognitive development potential is time-limited. This assumption also signals that, the teacher from the onset in the teaching of Economics must

incorporate CL methods and must encourage his or her students to adopt the cooperative style of learning as they begin learning the subject. They must start with this contemporary strategy from the onset of learning economics else they may not be aware of such a method and may not know how effective it is in their learning when they are asked at a later untimely time to use that method.

Finally, in order to understand how humans gets to know, there must be a careful study of the learning environment instead of the product or learner. This assumption also suggests that for social interaction or CL to occur, there must be a close and careful look at the environment in which learners are made to learn. The environment should be congenial enough to promote social interactions or cooperate learning among learners and also with their teachers serving as facilitators. According to Vygotsky (1978), all higher mental processes need to go through a social step of cleaning or filtering before being integrated into one's own thought process via language use.

The zone of proximal development (ZPD) is of crucial importance or key in cognitive development theory by Vygotsky. This concept shows that each individual has a range of learning potential. ZPD detects the gap amongst what individuals can do single handedly without any assistance and what they can accomplish with support from others such as learning colleagues or peers and the instructor or teacher. By linking this to SHS economics students, each individual economics student has the potential of understanding certain topics but may be facing some challenges in other topics in the same subject hence may need the assistance or guidance from other learning colleagues and sometimes from the

teacher in comprehending such challenging topics. This necessitates the use of a CL method in the study of economics which may consequently lead to an improvement in the performance of Economics.

Vygotsky (1978), gave a positive relief by saying that a child can cooperate today, but will be able to work alone tomorrow. That is explicit in his statement that ones the individual SHS economics student gets the needed assistance from his or her colleagues or the teacher in challenging economics topics such as national income accounting and determination or elasticity of demand and supply, performance in subsequent similar task will be massive. Doolittle (1995) suggested that three aspects which can be observed from the ZPD are need for social interaction, whole class activities and change. These aspects are elaborated as follows;

To Vygotsky, higher mental skills like reading, writing, problem solving or critical thinking must be taught as a whole rather than doing it in sections. He therefore advocated role play as one of the many activities which facilitates important learning and development by stating that;

> *"Teaching should be organized in such a way that reading and writing are necessary for something…Reading and writing must be something the child needs. Here we have the most vivid example of the basic contradiction that appears in the teaching of writing …that writing is taught as a motor skills and not as complex cultural activity…Writing must be relevant to life"* (Vygotsky, 1978; pp. 117-118).

Doolittle (1995), also observed in Vygotsky's theory that children construct knowledge and experience skills as a result of interacting with other well-informed and experienced individuals, mostly their peers and sometimes the teacher who serves as the facilitator. This observation from Vygotsky is emphatic on a congenial or serene environment through which effective social interaction or cooperation can be carried out. Linking this idea to the study of economics at the SHS in Ghana, students must be willing to help each another or to embark in CL in studying economics topics. Also, economics teachers who are the facilitators must also create an enabling environment for students by providing guidance and encouragement to them albeit reluctantly which will lead to an improvement in the performance of economics at the WASSCE.

Finally, the third goal or aspect of the ZPD in Vygotsky's cognitive development theory as observed by Doolittle (1995), is a change and growth in the individual. The ZPD suggests that "the only instruction that children should receive is that which precedes and directs development" (Vygotsky, 1987; p.48). A recommendation for inclusion of CL strategies in classroom instruction was made by Doolittle (1995) as he concludes on the ZPD in Vygotsky's cognitive development theory. That is, final result of CL among economics students and also with the guidance from their respective economics teachers will results in growth and development in a culturally appropriate way (an improvement in the performance of Economics Students at the WASSCE).

Piaget's Cognitive Development Theory

In his theory of socio-cognitive conflict, Piaget (1932), asserts that the urgency of CL occurs when a child is compelled to re-evaluate his/her understanding and perspective due to contradiction which occurs from interactions with others. That is, children ponder on their perceptions and if they find any inconsistencies, they try to resolve them by seeking clarification from their peers or teachers. Hence there is the need for CL in Piaget's theory too. Individual SHS economics students may encounter challenges (inconsistencies) in the learning of certain economics topics hence they may try to resolve them for a better and clearer understanding by seeking assistance or guidance from their knowledgeable peers and also from their teachers. Once their inconsistencies have been resolved in challenging topics by their knowledgeable peers or teachers, they will be able to perform creditably in any similar subsequent task hence an improvement in performance.

Gillies and Ashman (2003), are of the opinion that Cognitive conflict drives youngsters to reconsider how they perceive the world, which serves as a catalyst for transformation and better fit with the feedback they receive. They further observed that interaction with peers is a foundation for change since children are very straightforward in expressing their thoughts (p.12). Learners speak directly with one another in a simpler, clearer and understandable ways which help to reconcile differences among themselves (Damon, 1984).

It is therefore obvious from Piaget's cognitive theory that SHS economics students must engage in CL with their peers and sometimes the guidance of their

teachers in order to sharpen their understanding in economics thereby enhancing an improvement in performance in the subject area.

Social Interdependence Theory

It was first proposed in early 1900s with the emergence of the Gestalt school of psychology. Kurt Lewin later developed the theory in 1935. This theory also serves as a complement to Vygotsky's and Piaget's view on relevance of CL in encouraging desired growth and development in learners. According to this theory, the way individuals (learners) interact with each other is determined by the structure of social interdependence.

To Kurt (1935), for group work or CL to occur there must be an interdependence amongst learners towards a common goal. SHS economics students in Ghana have a common goal of understanding the various economics topics they are being taught by their teachers to ensure a better performance or achievement at the WASSCE. This calls for a common understanding or interdependence among them to learn in teams or cooperative way so that they can help one another to overcome the challenges they face in studying the various Economics topics which will eventually lead to a better academic performance in the subject area during their final WAEC exams. The teacher must also guide and encourage students in this direction as Johnson, Johnson, and Holubee (1998) recommends that there must be a positive interdependence or cooperation among students and also their teacher who is a facilitator.

According to Johnson and Johnson (1999), positive interaction is the outcome of positive interdependence as people "inspire and enable each other's

effort to learn". That is, knowledge should be reconstructed to be insightful and this is achievable via active team work or CL among students and sometimes with their instructor or teacher. SHS economics students must therefore have a common goal of overcoming the challenges they face in the study of economics topics by teaming up or embarking on CL so that, they can hitherto learn and master those topics which they find challenging and sometimes seek guidance from their teachers to enhance an improvement in their Economics achievements or performance at the WASSCE.

Concept of Cooperative Learning

Research on the trend of CL discloses that, incorporation of CL into educational programmes was introduced first, in subject areas like mathematics and science (Farzaneh & Nejadansari, 2014, p. 288). With time, this innovative method proved to be an effective method and was adopted into other subjects. The relevant question that must be posed here is that, what is CL? Is it a teaching technique or a learner-centered method of learning? Different definitions have been given by various researchers which will help answer the above questions.

According to Wichadee and Orawiwatnakul (2012), CL is a teaching approach where students of varied abilities work in small groups engaging in numerous activities of learning to improve their comprehension of a subject. CL is a pedagogical technique where students independently learn by both elucidating the subject matter to their peers and gaining knowledge from them (Riley & Anderson, 2006). These two definitions suggest that CL is a teaching technique based on the

words “teaching strategy” and “pedagogical method” used by Wichadee and Orawiwatnakul (2012) and Riley and Anderson (2006) respectively.

However, Oslen and Kagan (1992), sees CL as learner-centered activity by stating that “CL is a style of group instruction where each participant is responsible for his/her own learning and encouraged to advance learning of others. Learning is dependent on socially regulated exchange of information between participants in groups.” (p. 8). This opinion was also supported by Koppenhaver and Shrader (2003), that CL strives for a learner-centred approach and asserts its goal to elevate comprehension and logical thinking, foster critical thought, and enhance the precision of long-term retention.

The issue is, whether CL is a teaching method or learner-centered method of learning, they all aim at facilitating an increase in the performance of learners. According to Bourner (1997), teaching methods are not an end in and of themselves but rather a means to an end; they are vehicle(s) we use to lead our students to specific learning outcomes. For purpose of this study, CL will be considered as a team learning among groups of students trying to help each other to learn and also a teacher offering assistance or guidance to his or her students to explain concepts in a subject area and for that matter economics. This operational definition is at tandem with the definition by Koppenhaver and Shrader (2003), which sees CL as a learner-centred technique which aims to elevate learners understanding, enhance logical thinking and critical thought as well as precision of long-term retention.

Commonly used Cooperative Learning Activities

From definitions given by several scholars, it can be observed that there are several activities or varieties of CL. For example, Farzaneh and Nejadansari (2014) observed from literature of Johnson, Johnson and Stanne (2000), that CL approach encompasses a broad array of instructional methods such as the three-step interview, Academic controversy (AC), Student-Team-Achievement-Division (STAD), Team-Games-Tournament (TGT), Group investigation (GI), the Jig saw procedure among others.

McLeish (2009), also identifies some CL strategies as the think pair share method, the Jig saw method and the round table method. Asare (2016), also talks of the student Team Learning method (STLM), the Jig saw method, the group investigation method and the learning together (LT) method. From the above listed activities or strategies under CL, the most commonly used techniques are discussed below:

1. **The Jig saw method**: this technique is credited to Aronson, Blaney, Stephan, Sikes and Snapp (1978 as indicated by Baloche, 1998). This method consists of a group size of three to four learners. This technique gives students the opportunity to conceptualize, reconceptualize and teach others. This approach facilitates a number of interpersonal and group learning abilities, including the ability to share ideas, listen intently, educate, organize, synthesize information, and ask clarifying and inquisitive questions (McLeish, 2009, p. 23-24). It is based on the principle of division of labour in management. With this method, a task to be accomplished is

divided into sub-task and each group member is given a specific assignment to complete before discovered findings are discussed among the group members. This method's goal is to do tasks more quickly (Asare, 2016).

2. **The think pair share method**: with this technique, each student is given the chance to think and exchange ideas with their contemporaries. An indispensable benefit of this technique according to Baloche (1998) are, interpersonal and small group learning skills such as sharing idea, listening attentively, asking instructive and analytical questions and restating of ideas are being fostered. This technique comprises the following 3 steps;
   (a) Teacher asks a question or poses a problem; students are to reflect on them personally.
   (b) Pair students together to converse their ideas
   (c) Each student is called upon by the teacher who acts as facilitator in the learning environment to share their answers with the entire class (Baloche, 1998)
3. **The Round table method**: this method has the same group size of three to four members as applied under the Jig saw method. The following steps are involved. Teacher asks a question or poses a problem; students think and write by themselves. In groups of three or four, students "go around the table" and in turn share their responses, (Baloche, 1998; p. 103)
4. **The student Team Learning Method (STLM)**: Slavin developed this activity of CL in 1983. It can take a form of Team-Games-Tournament (TGT) and Student-Teams-Achievement-Division (STAD). Students are

grouped in teams and are made to compete against each other in these two forms. In the TGT, members have the same achievement levels whilst there are varied achievement levels in the STAD. The collective improvement of the team members determines the overall grade score of the teams (Asare, 2016, p. 25).

5. **Group Investigation Method**: This method is usually used at the tertiary institutions. It was a technique developed by Sharan and Sharan (1976). With this method, several groups are created in a class by the facilitator and the groups are given different tasks by instructor, where the groups are made to deliver their findings to an entire class in the form of presentation by teaching the rest of the class by clarifying contradictory concepts, (Asare, 2016, p. 25).

Direct versus Indirect Methods of Teaching

To avoid a misinterpretation in this study, it is pertinent to distinguish clearly between a direct and indirect techniques of teaching. Traditional instructional techniques are used to impact knowledge to students under a direct method of teaching also known as passive learning whiles students work individually or in teams with an assigned task in an indirect or active method of teaching.

Jahr and Wysocki (2011), observed that direct instruction is most frequently used method of teaching. The methodology that a teacher employs signals how he or she approaches teaching. Borich (2007) gives a clear difference amid direct and indirect teaching methods by stating that “you are employing the indirect model of

education when you give your students instructional stimuli in the form of content, materials, objects, and events and ask them to extrapolate from information provided to draw inferences and generalizations." Direct instructional method has the following limitations as observed by Borich (2007). These are (a) composing parts of the content learned into a whole, so that rapid and involuntary response can ensue and (b) learning units of content taught so they can be remembered.

These two setbacks observed can be summarized by saying that direct methods of teaching are less time consuming than the indirect method however, it has a limitation in the sense that learners cannot socially construct and reconstruct knowledge. Egyen, Jacobson, and Kauchak (2006), distinguish between the direct and indirect methods by using the terms "passive learning" for direct methods and "active learning" for indirect methods. They defined active learning as process in which "students are given considerable autonomy and control of the direction of learning activities" whiles "students are passive receivers of information, including listening to teacher's presentation, being asked a series of closed questions and the practice of applying information already presented" in a passive learning. In brief an active learning is learner centered which encompasses an array of practices such as CL activities or methods and group work whiles students are receivers of information in passive learning with little or no questions asked (Burke, 2011).

Indirect or active learning is about teaching of concepts, patterns, abstractions, analysis, synthesis and evaluation (Brenau as cited in Oladayo & Oladayo, 2012). As indicated by the zone of proximal development (ZPD), an indirect instruction permits learners to operate at higher levels of knowledge. This

method ignites the passion of teacher to commence lessons with advance organizers which give an overall view and allows for concept elaboration. It emphasizes on students' use of both deduction and induction in their responses to hone and focus generalization (Asare, 2016).

From the literature discussed so far, it is explicit that an indirect method or active learning is preferred to a passive or direct method since the latter obstructs learners from constructing knowledge themselves. Jahr and Wysocki (2011), are of the opinion that an indirect instruction should be a simple choice of a favoured instructional technique. This was agreed by Malone and Tanter (2003) that learning should link the learner to the physical world, and others through interaction and this is only accomplished through an active or an indirect method of teaching.

Justification for a Cooperative Learning Strategies

Studies conducted by various researchers support the inclusion of a cooperative method in teaching and learning since it contributes to an improvement in student's academic performance. Some of these findings to support this course are discussed below. Shimazoe and Aldrich (2010 as cited in Adu & Galloway, 2015), enumerates some benefits of CL as; It encourages deep learning of materials, it helps learners to attain better grades as compared to individual learning, Students learn social skills and civil values, Students learn higher-order, critical thinking skills, it encourages personal growth, Fosters collaborative and social thinking through generating knowledge at a higher level of cognitive thinking and deliberation in the context of classroom-based teaching and learning. (p. 32).

By making an inference from these observations, it can be concluded that since CL promotes critical thinking and deep absorption of content, there is the likelihood that, the use of such an instructional technique could help improve students' achievement in economics during the WASSCE. Catalano and Catalano (1999), justified the use of CL by stating that it is more effective than the passive method since it inspires students to take an active role in their own learning. They arrived by this statement when they conducted a study at Louisiana state university in an undergraduate course in fluid dynamics by dividing the teaching styles into two sections; traditional teacher-centered style and the learner-centered method. An examination was conducted after application of the two methods and the results proved that students performed better in learner-centered style and were more pleased with their professors than the teacher-centered style (McLeish, 2009, p. 12). Johnson et al. (1998), opine that cooperative efforts have these 3 main positive results. These are; Increased effort towards attainment, encompassing enhanced achievement for all students, lasting knowledge retention, intrinsic motivation, extended time dedicated to tasks, cultivation of higher-order reasoning, and the promotion of critical thinking. Besides, it enhanced psychological well-being, overall psychological adaptation, ego strength, social growth and skills, self-esteem and capacity to effectively handle challenges and stressors and finally, it fosters more positive student relationships, characterized by a sense of camaraderie, caring and dedicated connections, both academic and personal social support, an appreciation for diversity, and strengthened unity.

Beebe and Masterson (2003) also observed some benefits students reap from CL. First, people remember group discussion better. This presupposes that group learning fosters effective learning and comprehension leading to an improvement in performance. Also, groups have more information than an individual learner. That is in group learning, students with different background and experience with greater resources have the tendency to tap useful and more available information. Besides, group learning fosters creativity which is in line with the adage "two heads are better than one". Last but not least, learners gain better understanding of themselves since group work permits individuals to assess themselves better with regards to how others see them and finally, the decision arrived at in group learning, guide students to yield great satisfaction or output and for that matter performance.

Drawing an analogy from all the above research work indicates that CL do not only have the tendency of improving performance in economics but also facilitate critical thinking, social skills, self-confidence and acceptance of oneself just to mention but a few in learners (SHS economics students).

Students' Perceptions towards Cooperative Learning

In reasoned action theory, Ajzen and Fishbean (1980) assert that attitudes are functions of beliefs. This suggests, once students believe that engaging in CL activities will results in positive and improved performance, then they will develop a stronger attitude towards such a teaching and learning method. On the contrary, if students consider that there is less positive impact on the use of CL activities towards the performance in a subject then they will develop less interest or attitude

towards its use. Assessing the impact of CL towards the performance in economics will therefore help to ascertain whether students will develop a stronger attitude towards such a teaching and learning strategy or otherwise.

Conceptual Framework

Building on the idea of ZPD as stressed by Vygotsky (1978), using teacher-centred method of teaching learner is capable of achieving some level of understanding in the study of some economics topics (actual growth of learner) but needs the assistance and guidance from his/her social environment (peers and teacher) in order to comprehend certain topics in economics which may be hitherto technical or quite challenging. A congenial social environment created by both peers and the teacher will guide the learner to reach his/her potential growth. A CL construct has been built by the researcher to depict how a cooperative method of teaching and learning will help the learner reach his/her potential growth. The framework is based on the following assumptions;

1. The Economics student has an actual growth by what he can achieve in the study of some topics in Economics by the teacher teaching him/her through the conventional or traditional method but faces a challenge in understanding certain topics.
2. The learner is introduced to CL through the Jig-Saw and Think-pair-Share strategies as an intervention by his teacher.
3. The learner develops a perception towards learning through the introduction of the CL intervention as he/she interacts with his peers while teacher acts as facilitator.

4. Finally, learner's reaches a potential growth which is improvement in Economics performance.

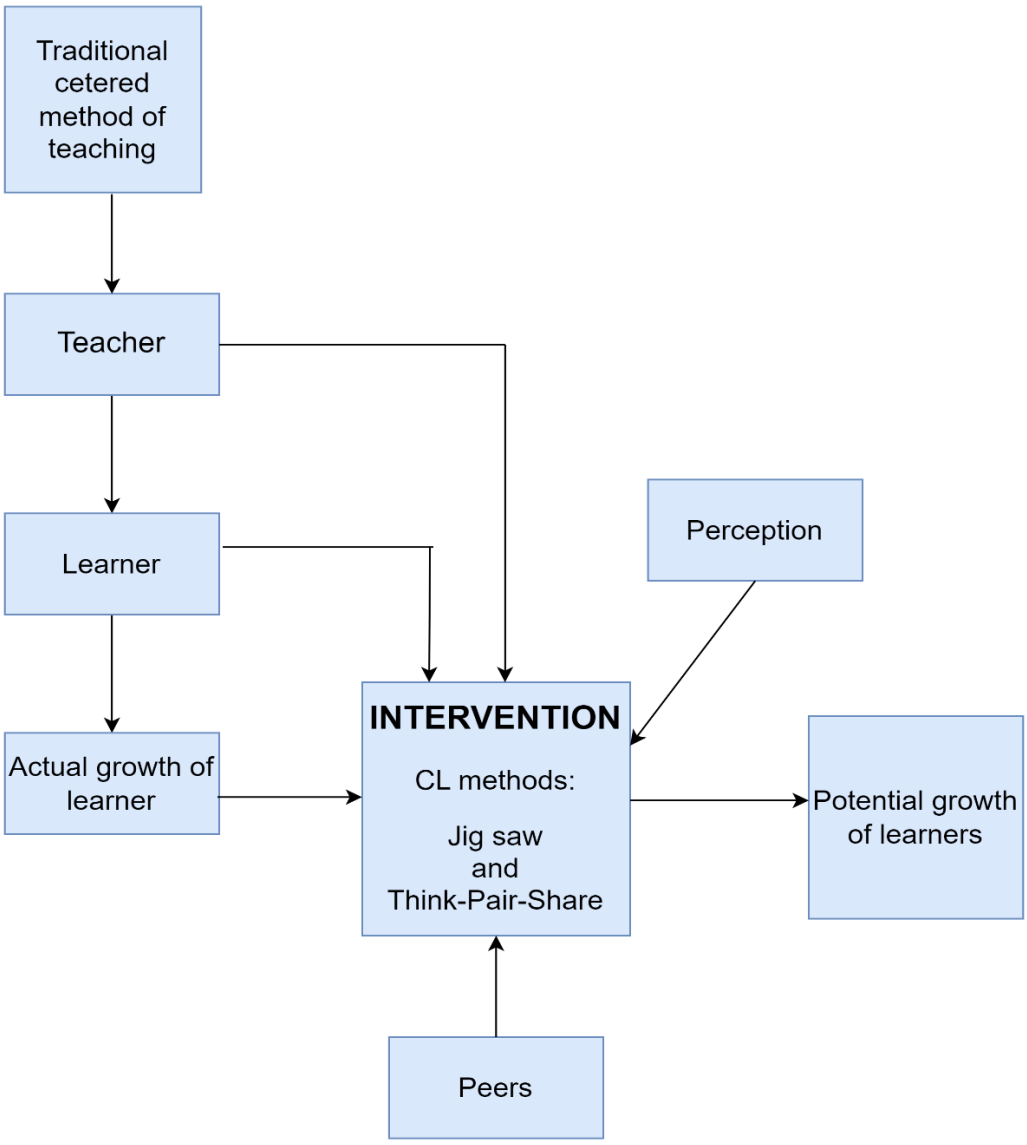

Figure 1: Boachie's cooperative learning construct
Source: Author's construct (2022)

Actual growth of the learner: Here, student is presumed to be operating at higher level of cognition by being able to read and understand some topics in economics by the teacher teaching him/her through the traditional and conventional

method. By employing a quasi-experimental design, the researcher will conduct a pretest in order to assess the level of academic performance of students at this stage to find out the effectiveness or otherwise of the traditional teacher-centered method.

Intervention: The teacher introduces the learner to CL through an intervention specifically the Jig-saw and Think-pair-share method whereby the learner interacts with his peers. A serene social environment for teaching and learning is then created which guide the learner in understanding topics which are technical to him/her. The learner then develops an affirmative perception since it leads to a change in his/her learning. After the treatment condition, the researcher will conduct a posttest to assess the level of economics performance of students in order to ascertain the effectiveness or otherwise of the intervention.

Learner's Economics' Achievement: By developing a positive perception towards CL, the learner reaches the desired higher level of cognition whereas by developing an unfavorable perception towards CL, the learner reaches a lower level of cognition. The learner's potential growth is thus affected.

Empirical Review

At this section, the researcher will review the available related literature conducted on CL. The following headings were used to organize the review: Studies on the benefits of CL; Studies on the challenges faced by students in CL; Studies on students' attitude towards CL; Studies on CL and gender difference. The review was conducted to aid in filling the gap identified.

Studies on the Benefits of Cooperative Learning

A search into existing literature shows CL as an efficient and effective pedagogical approach that leads to an improved academic performance. A number of studies show clearly the merits students derive by engaging in this method of instruction. Below are some empirical studies on the benefits of CL. Felder and Brent (1994) conducted a longitudinal study at the North Carolina state University on the topic "CL in technical courses; Procedures, pitfalls and Payoffs". The objective was to determine merits, setbacks and remedies to CL in technical courses. They used a variety of non-traditional teaching strategies, such as cooperative or team-based learning, to teach 5 chemical engineering courses over the course of 5 successive semesters.

As part of the longitudinal study, procedures were devised or adapted for implementing CL in courses that stress quantitative problem solving. The researchers observed that students were comfortable with working in groups and it translated to other courses. In comparing benefits of CL with the traditional method, a lecturer was made to teach the same category of students using traditional method at the third semester. The results showed that students who were taught using traditional method gained an average score of 50% whiles those who engaged in CL gained 72% and 78% in the first and second test respectively. The researchers summarized their study by concluding that CL techniques had a positive outcome of transforming students' work ethics.

By making an inference from this study, it seems that by employing CL strategies such as the Jig-saw method, the think pair share method, the round table

method among other CL methods in the teaching and learning of SHS economics topics, may hitherto lead to the same positive results of uplifting the academic performance of students who study the subject at that level.

Johnson et al. (2000) conducted a study at the University of Minnesota to discover the most effective CL methods by reviewing a total of 158 studies on specific CL methods (p. 5). The researchers opined that these studies on CL were conducted in various parts of the world and at various levels; Elementary, Middle and High Schools. With an improvement in academic performance as one of the benefits of CL, the researchers went ahead to meticulously outline some benefits of this contemporary method to include higher-level reasoning, perspective-taking, interpersonal attraction, social support, friendship, reduction of stereotypes and prejudice, valuing differences, self-esteem, psychological health, social competencies, internalization of values and many other outcomes. Johnson et al. (2000) summarized their study by stating that "The consistency of the results and the diversity of the CL methods provide strong validation of its effectiveness" (p.2). This literature indicates that if such CL methods are incorporated into the teaching and learning of challenging economics topics such as National Income Accounting and Determination, Market Structures, The Theory of Cost, Production, Consumer Behavior etc., there is the likelihood of an improved performance on the part of students. With the objective of creating a model for the use of CL as a teaching technique for Economics tutors in further education and training, Wyk (2007) conducted a study using the descriptive survey design at the Free State Province of South Africa.

A total of two hundred Economics tutors were the population used for the study. With the aid of a questionnaire as the main instrument, both primary and secondary data were gathered. Through study findings, the following were outlined as some of the benefits of CL as observed by Wyk.

a) Developing learners' social skills
b) Improving satisfaction of learners with their learning experiences
c) Promoting learners' learning and academic development
d) Promoting learners' self esteem
e) Helping to promote race relations amongst learners.
f) Helping learners to develop verbal communication skills

The researcher summarized that; all these benefits can be attained only in a conducive environment that fosters optimal learning. It can be deduced from this research work that when a cooperative style of learning is employed in teaching SHS economics students in a serene environment that promotes optimal learning as suggested by the researcher, all the above outlined benefits can be harnessed by students. Also, in assessing the effectiveness of CL, Dietz-Uhler and Lanter (2012) embarked on a survey which involved 16 students out of a total of 22 taking an introductory psychology course. The research prime objective was to ascertain the benefits of CL in a group-online discussion. Students were randomly appointed to lead small groups in an online discussion. Responses from the questionnaires that were given out at the end of the course indicated that cooperative activity was an efficient means of fostering students' interaction and an improved academic performance.

Another study on the benefit of CL was conducted by Grech (2013) at the University of Toronto in Canada. The purpose of the study was to contrast the benefits of using direct instruction vs using concept maps created by experts and CL. The researcher employed the quasi-experimental research design in his study. The study comprised a total of 109 students in an intermediate accounting course from which 54 students were in control group with 55 students in experimental group. The outcome of the study indicated that students benefited from CL activity since it led to an improved academic performance by students, in coping with challenging courses and passing creditably.

Adu and Galloway (2015) conducted a study on CL entitled "The effects of CL on students' Economics achievement and attitude towards Economics". The objective of the study was to ascertain effects of CL in Students' economics achievement and attitude towards economics as a subject taught in schools. The researchers employed the quasi-experimental study in two SHS classes in Lagos, Nigeria. In all, 82 students were used, with 44 students in experimental class and 38 in control class. Achievement test which comprised 16 Objective test items and ten written questions as well as an attitude questionnaire were the instruments used for the study. A pre-test and post-test were administered in both control class and the experimental class. The study's results revealed that there was a significant difference between CL and students' economics achievement (p. 34). In other words, the implementation of cooperative method of learning led to an improvement in students' economics achievement. The researchers were of the notion therefore that, CL is an efficient approach and they therefore recommended

that all Economics teachers at this level of education need to integrate this method in their teaching if they desire improved results. It can be deduced from this study that the inculcation of CL methods in the teaching of Economics topics especially challenging ones like National Income Accounting and determination could lead to an improved performance by students in the subject area.

Moradi, Faghiharam, and Ghasempour (2018) conducted a descriptive correlational study using structural equation modeling at the Islamic Azad University in Tehran, Iran. The study's purpose was to examine, among SHS students, the relationship between interpersonal skills and group learning, with a focus on the mediating function of emotional intelligence. The study involved 1,800 Senior High School Students from which, a sample of 316 was chosen using simple random sampling technique. Questionnaires on interpersonal Communication skills, Emotional intelligence and Group learning, with reliability coefficient of .81, .87 and .71 respectively, were the instruments used for the research. After executing the respective questionnaires and analyses been made, the researchers concluded that interpersonal skills and emotional intelligence are directly impacted by group learning, while emotional intelligence indirectly impacts interpersonal skills. In brief, group learning as one of the CL designs has potential of fostering emotional intelligence and interpersonal skills among students. This finding concurs with those made by Wyk. It can therefore be deduced from this particular study that if economics tutors in the various SHS worldwide employ CL methods in teaching and learning of economics topics, not only will it lead to an improvement in the performance of the subject as justified by various researches but also promote other

benefits associated with this style of learning such as interpersonal skills and emotional intelligence among students.

In the nutshell, it can be deduced from the above literatures that an effective implementation of CL methodologies in teaching Economics topics at SHS might probably lead to an improvement in performance in the subject by students and other associate benefits such as critical thinking, interpersonal skills, emotional intelligence, socialization etc. It seems relevant therefore that, the researcher follow suit in the approaches of earlier researchers to find out if such an outcome can be realized in teaching of economics at this educational level.

Studies on the Challenges faced by Students and Facilitators in Cooperative Learning.

CL, as a learning instruction strategy, involves social interaction and any activity which involves social interaction or people and for that matter learners coming together to learn cannot be without setbacks despite the benefits associated with this method of instruction. A search into the existing literature reveals some challenges faced by students when involved in CL. Asare (2016) opines that educationists have struggled to find effective ways to fulfill the requirements of pupils from varied language and racial backgrounds. From his observation, it can be inferred that there are ethnic and language barriers which make the implementation of CL methods in schools somehow challenging since individual students come from different backgrounds.

Beebe and Masterson (2003) also contend that in CL, some students who are self-centered might attempt to dominate the discussions with their peers which

makes some of their colleagues not to gain the maximum satisfaction associated with this method of instruction because they feel segregated in the process. As a supplement to this assertion, Feeman and Greenacre (2011) intimates that some students seem to exhibit lukewarm or lackadaisical attitudes by not partaking or contributing in the task that has been assigned to the group by their facilitator(s) during CL. They relent on their efforts to contribute to the work by depending on their other colleagues in the group to finish up with the task given to them. This has the tendency of hindering the prime objective of CL and its associate benefits. At this juncture, it is prudent to consider some studies that explicitly indicate some of CL challenges students encounter.

Also, Scherman and Du Toit (2008) embarked on action research at University of Pretoria, South Africa, using Master students who were pursuing research design as a course. The study's purpose was to determine how CL could be used as a medium in enhancing acquisition of skills and knowledge in the area of research methodology. The study population involved eight Master Students which comprised one male and seven female students. Journals and semi-structured interviews were used to obtain data needed. Five students were interviewed whilst three of them were asked to keep a journal. Thematic analysis was used to develop themes for deliberations based on prescribed guidelines. The study's findings indicated that though students enjoyed use of CL as a worthwhile approach in teaching, however, the following challenges were identified: Due to stress from obligations or duties at home or in the family, some students get exhausted during discussions in CL and therefore fail to participate fully. Individual differences or

personal characteristics made it difficult for the students to work in groups since some students are egoistic and self-centered and prefer to work on individual basis instead of working in groups to achieve the group's goal. There was also an issue with the time to which members in a group must altogether accept to meet for discussion. This was a challenge because whiles some members in the group were ready for a discussion, other members in the same group were not ready due to stress which has the effect of slowing down the progress of the entire group in achieving its goal. Also, due to much workload of the course the students were pursuing, some could not join discussions in CL therefore, needed to do sole-learning to catch up with their contemporaries in the group. Some students might limit how much others enjoy and appreciate CL for reasons such as being bossy and wanting to overshadow or control the entire group during discussions (p. 435). The researchers were of the opinion in their conclusion that, there must be proper planning by the facilitator or teacher in streamlining the challenges identified above, so that CL could be more effective, 'the lecturer must be creative and keep the action going' (p. 436).

At an Australian public university, O'Leary and Stewart (2013) conducted action research using 137 final year undergraduate students studying Audit and Assurance course, which was a prerequisite for the award of Bachelor of Business (Accounting) degree. The objective of the study was to evaluate accounting students' learning styles and assess interaction of teaching methods and learning styles in an ethics instructional setting. Students were subjected to 3 different methods of teaching amidst passive and active CL methods during lectures and

tutorials and assessment procedure was such that exercises were given during instructional hours and were collected at the end of every week for marking. 5 ethical vignettes were used to evaluate students perceived ethical attitudes. The vignettes were used in both pre and post study to evaluate accounting students' changes in perceived ethical decision making. Data obtained from the respondents indicated that after the pre and post study, students preferred a passive learning style, despite being too advanced in their education. The researchers therefore concluded that, instructors or facilitators in the classroom must consider diverse learning styles of the students before choosing appropriate teaching methods to employ in the classroom during instruction. The challenge therefore here is for teacher serving as a facilitator to determine the various learning styles of individual students to determine an apt instructional method to employ in the class during instructions. By applying this finding in the teaching and learning of Economics at the SHS level, difficulty lies in the onus of the teacher to determine various learning styles of individual Economics students, to determine the appropriate instructional methods to employ during instruction. It is for this reason why the researcher wants to employ different CL styles in the teaching of National Income Accounting and Determination as a topic in SHS Economics syllabus to ascertain if it could lead to an advancement or improvement in performance by students.

Devi, Musthafa and Gustine (2015) also conducted a qualitative case study at Department of English at University of Education, Indonesia. The study's purpose was to investigate how CL enables students in learning critical thinking in reading, to unravel merits and setbacks that crops up during implementation of CL

in a vocational school in Cimahi, a suburb of Indonesia. The study involved 33 students. Classroom observations, questionnaires, semi-structured interview and written test were instruments used. Students were subjected to a treatment of three CL styles which were the Jigsaw method, the think-pair-share method and the structured controversy in 6 sessions.

Students were given critical reading task in order to examine their critical thinking in reading. A close-ended questionnaire was given to students after the instruction to ascertain opinions of students on the benefits and challenges they face when they engage in CL. The study's findings indicated that, factors like individual accountability in a CL group, Face-to-Face promotive interaction, positive interdependence, encouragement of student-student interaction, group processing which involves time for students to reflect and come out with their findings among other factors are key elements that promotes critical thinking among students. Data obtained from students about their views on the benefits of CL included higher involvement and motivation, increased opportunity for language use, development of interpersonal relationship etc. The study however unravelled some challenges faced by students during CL and they were: The challenge with the availability of time for the implementation of CL methods. Responds from the questionnaire that were administered during the study indicated that, 69% of students were of the view that the time allotted for discussions using CL strategies were barely enough. 100% interviewees consented to the same assertion when they were interviewed. This stemmed from the fact that small time was allotted to English Language teaching in the vocational school, Indonesia (2 × 45 minutes in a week) which was barely

enough. Another challenge was with students' English proficiency. Four students who were interviewed acknowledged that, lack of language proficiency for instance pronunciation, limited vocabularies and grammar served as impediments in making them to contribute effectively during discussions to ensure that the groups' goal is achieved. The final challenge that was identified from the study was students' contribution to the group work that were given. This was an issue because some students did not know what to do in the group. The questionnaires administered showed that about 22% of students in the study admitted that they did not know how to work in their groups. Also, some students contributed little or nothing to the group work (p.10) The researchers concluded their study by stating that despite the limitations identified above, CL seem to facilitate critical thinking and interpersonal skills among students hence, a facilitator role of the teacher in CL is to ensure that such challenges identified are meticulously tackled in order to promote CL among students which may lead to benefits such as critical thinking, interpersonal skills, improvement in performance among other benefits.

To find an in-depth explanation as to why CL has well-established benefits yet its implementation remains an albatross, Buch, Filippou, Pulfrey, and Volpe (2017) embarked on a descriptive survey using 207 elementary school teachers from 67 schools in Switzerland. The study's purpose was to bring to light challenges elementary school teachers face, based on teachers' beliefs concerning learning and difficulties they mostly report on during CL. Study's instrument used was a structured questionnaire. Some teachers taught only one class whiles others taught several classes employing both the traditional and CL methods. After the

questionnaires were administered to these teachers in the course of the study, the feedback showed that the most common instructional strategies used are the traditional ones like transmission, teacher-monitored, individual work and collective class discussion. This stems from the fact that most teachers' belief that learning results from teacher-delivered knowledge. Others were also of the view that it was not easy implementing CL strategies in the classroom because it was time consuming, aligning or embedding CL in the curriculum by the teacher was extremely difficult due to limited contact hours with pupils and finally the difficulty in evaluating them after using CL strategies. Teachers who believed pupil construct knowledge through social interaction are those who employ CL strategies in their class whiles those who believe that learning is derived from teachers delivering knowledge are those who employ the traditional methods in their class and promote individual work. In conclusion, the research indicated that the challenges encountered in CL implementation were conditions such as the pedagogical convictions or teachers' belief concerning learning as well as pragmatic hindrances such as time needed to engage in CL and curriculum constraints. The researchers therefore recommended that teacher education programmes must help address those challenges identified.

Studies on Students' Perceptions towards Cooperative Learning

In reasoned action theory, Ajzen and Fishbein (1980), proposed "attitudes as functions of belief". This implies that, the degree of acceptability or belief in engaging in an effective CL, stimulates or results in the level of commitment or interest (attitude) towards it. That is to say, believing that carrying out a task will

result mainly in positive results lead to having positive attitude about that task. In contrast, doubt about the achievement of executing a task will result to having a negative attitude towards that particular task. Therefore, if Economics students at the SHS believe that cooperative methods will have significant impact on their economics achievement, then those CL methods will hitherto be beneficial to them. The way students' reason, comprehend, feel and behave can be shaped by their attitudes formed. Countless number of researches have been conducted on learners' attitude towards CL. Some indicate that students have positive towards CL whiles other studies indicate otherwise. It is expedient therefore for the researcher to ransack some of these literatures to ascertain their position on this topic through their studies.

McLeish (2009) employed the mixed method in a descriptive study in finding out about students' attitudes towards CL technique at Knox Community College, Jamaica. He employed probability sampling method to select 100 students as a sample from 198 students at Knox community college MayPen campus. The study's instruments used were an interview, observation guide as well as a questionnaire. Fifteen lecturers, selected through a purposive sampling method, were asked in an interview about students' attitude towards CL in their respective classes. Responses from three lecturers indicated that during CL activities, whether within or outside classroom, some students showed great disregard in participating (p. 55). Students on the other hand were asked through a questionnaire with regards to how often lecturers inculcate CL strategies during instructional hours and their attitudes towards CL in general. Twenty four percent of the students showed that

lecturers continuously use CL strategies during instructional hours whiles 75.6% of them revealed that lecturers sometimes employ CL strategies in the classroom. This implied that students were even not all that familiar with CL strategies since most lecturers do not use them often. Consequently, only 22.1% of students indicated at the end of the study that, they have an appetite for CL and they preferred that lecturers use CL strategies in guiding them to learn whiles 77.9% of the students on the other hand, showed negative attitude towards CL and preferred to work on their own. Among reasons why majority of the students preferred individual learning to CL included; the tendency of some group members not pulling their weight when they engage in CL activities, conflict of interest and unwillingness of individuals to partake during CL activities (p. 54-56). The researcher therefore recommended that, teachers who serve as facilitators in CL must formulate a method in which members in a group involved in CL activities are graded or evaluated while group members should be able to assess each other in the group with appropriate motives. That is, with this particular study, students developed negative attitudes towards CL activities.

A study entitled "A study of students' attitude towards CL" was investigated by Akhtar, Perveen, Kiran, Rashid, and Satti (2012) by employing the mixed method approach. The study's purpose was to investigate opinion of students towards CL in the domain of group work and graduating students' projects at Department of Statistics and Economics in Pir Mehr Ali Shah Arid University, Pakistan. The study consisted 66 students comprising 36 Statistics Students and 30 Economics Students. The study's instrument was a questionnaire comprising of 14

items on a Likert Scale. Questionnaire items focused on the successful implementation of CL techniques in group works and projects domain. The instrument was administered to the 2 groups separately. The study's results showed students positive attitudes towards CL for reasons such as passion on the part of individual members to work collectively towards the success or common goal of the group, enhancing improved learning and socialization (p. 144). The students indicated that such benefits were achieved because there was proper planning and monitoring on the part of facilitators when they engage in CL activities. The researcher therefore advocated that, there should be proper and continuous monitoring by facilitators towards the group as well as on individual members in the group.

Another study which is analogous to the findings of McLeish (2009) was the one conducted by Herrmann (2013). He employed the quasi-experimental design to investigate impact of CL on students' engagements at tertiary level. The steering wheel of his research was to find out how CL strategies could be used to transform undergraduate students from passive and individualistic teaching and learning strategies to a more active and cooperative way of learning. 140 undergraduate students were used for the study. A questionnaire comprising two open-ended questions was the tool used in collecting data. The study examined general attitudes of undergraduate students by asking them to check-list either "most positive" about CL, "most negative" or "positive and negative". Study's results indicated that, 45% of students showed mostly negative attitudes towards CL activities whiles only 27% of them exhibited mostly positive attitudes towards

it with the remaining 28% shared between negative and positive attitudes (Herrmann, as cited in Asare, 2016, p. 44). The study concluded that majority of respondents showed negative attitudes regarding CL.

Farzaneh and Nejadansari (2014) investigated CL using the descriptive survey method. The study's objective was to examine students' attitude towards CL techniques for reading English as a foreign language (EFL). The study participants comprised of 52 intermediate EFL learners attending the Gouyesh Language school, Gachsaran, Iran. The study used survey questionnaire. Questionnaires were administered among participants of the study to ascertain their opinions about implementing cooperative technique for teaching reading comprehension. Respondents were tasked to use the Jigsaw procedure which is one of the designs in CL to engage in reading comprehension for a period of five weeks. The questionnaires were administered after students have been subjected to the treatment. Finally, the data were analyzed to examine students' attitude towards CL. The study's results revealed that students developed positive attitude towards CL since majority of students acknowledged that CL promotes good working relationship among students, promotes socialization, enhances improved achievements, and promotes ingenuity.

At the psychology department in the Wolaita Sodo University, Ethiopia, Reda (2015) conducted a quantitative study using the descriptive survey design. The purpose of the study was to investigate students' attitude towards CL in a psychology class. The participants of the study were 48 in all comprising 30 females and 18 males. A questionnaire comprising of both open and close ended

items were used as primary tool for the study. After going through a series of lessons by employing CL activities, the questionnaire which constituted a five-point rating scale was administered to the students. The study's results showed that students had positive attitudes (M = 40.68, SD = 11.39) towards CL methods based on their responses (p. 38). With the challenge of investigating business students' preference for CL using their attitudes as a proxy, Asare (2016) conducted quantitative study using descriptive cross-sectional survey design. By employing simple random technique, a sample of 400 third year business students at University of Cape Coast (221 Accounting major students and 179 Management major students) were used. 5-point Likert scale attitude questionnaire adopted from Farzaneh and Nejadansari (2014) was used. Prior to administering questionnaires by the researcher, both Lecturers and students were made aware about the intent of the study with an authority letter from the university's institutional review board. Respondents were given a period of 15 minutes to fill the questionnaires given to them and the return rate was 97% (386 questionnaires were collected out of 400). The study's results indicated that students developed positive or favorable attitude towards. The researcher therefore advocated that academic departments within the country must out of necessity establish use of CL strategies into teaching and learning of various courses at the university.

Amedu and Gudi (2017) conducted a study in CL in 3 selected SHS in Nasarawa state, Nigeria. The researchers employed the quasi-experimental research design. The thrust of the study was to examine students' attitude towards CL approach. With the aid of a purposive sampling technique, 179 SHS students

studying biology as a subject were selected from three Public Senior High Schools. A Jigsaw attitude questionnaire adapted from Koprowski and Perigo (2000) was the instrument used to collect the data. Permanent teachers from the selected schools served as research assistants in the study. They were oriented on how to employ the Jigsaw method which is one of the designs of CL, to teach students competently in the classroom. In each of the three schools, 2 classes were selected as intact or control group with one class also serving as the experiment group. Within a period of 12 weeks, the Jigsaw cooperation method was used as a treatment in teaching biology topics to the students that were in the experiment class by their facilitators. Afterwards, an attitude questionnaire comprising 10-items soliciting the views about CL were administered to students. The results indicated that students that were taught using the Jigsaw CL method developed positive attitudes towards CL activities. The researchers therefore proceeded to make some recommendations such as; teachers at the various SHS world-wide must be trained and retrained in order to acquaint themselves with contemporary and effective teaching and learning methods like the Jigsaw CL approach. They also suggested that, Ministries of Education all over the world must consider equipping classrooms with the pre-requisite facilities that promote CL among students.

With the objective of investigating tertiary students' attitudes towards CL, Katawazai and Saidalvi (2020) embarked on a study using the descriptive survey design. The study's purpose was to examine attitudes of Afghan tertiary students towards CL approaches in Afghan EFL content. In all, a sample of 165 undergraduate students from Department of English, Languages and Literature at

the Kandahar University in Afghanistan were used. The researchers chose the sample using simple random sampling, from a target population of 290 tertiary students studying English as a subject. Both close and open-ended questionnaire which consisted 23 items was the instrument used for the study. After subjecting students through series of CL activities by their facilitators in their various classes, the questionnaire was administered to them. The study's findings showed that generally, students had positive attitudes towards CL in their responses. For instance, 63.29% of students strongly agreed to the use of CL, 29.52% also agreed that CL enhances classroom participation with less than 7% disagreeing to the use of CL strategies (p. 311). The researchers therefore concluded their study by recommending that teachers must with immediate effect, effectively plan and implement CL strategies in classroom to facilitate meaningful learning experiences among students.

It is evident from the above elaborated literatures that a chunk of researches such as Akhtar et al. (2012); Farzaneh and Nejadansari (2014); Reda (2015); Amedu and Gudi (2017); Katawazai and Saidalvi (2020) etc. indicated that students developed positive attitudes towards CL in their study. On the contrary, few studies such as McLeish (2009) and Herrmann (2013), showed that students exhibited negative attitudes towards the use of CL activities in their responses. It seems from the literatures that supports CL that, students are likely to develop positive attitudes towards CL activities when there is proper planning and implementation in the classroom by facilitators.

Studies on Cooperative Learning and Gender Differences

Issues about gender differences in relation to education has become a matter of pressing concern. Kaenzig, Hyatt, and Anderson (2007) embarked on a study at the Appalachian State University Boone, North Carolina in the United State of America on team learning among second year Business Students. The objective of the study was to examine gender differences in college educational experience with respect to team learning. In all, 288 second year business students were used for the study. A focused group discussion and semi-structured questionnaires were used to gather data from students. A focused group discussion made up of 10-12 members were organized by the researchers for students to find out about their perception about group learning and subsequently the researchers developed the questionnaire and administered to students. Findings of the study indicated that male students exhibit positive attitudes towards group work since it was a reflection from their future job ($M = 2.83$, $SD = .67$). They however expressed a challenge they encounter during team work that some group members fail to perform the task assigned to them but that did not deter them from engaging in group learning because they never felt being taken advantage of by their learning colleagues. Their female counterparts however, expressed an opposite reaction and felt they were being taken advantage of when they perform the task assigned to them whiles their other colleagues in the group fail to do their part. Consequently, females tend to exhibit negative attitudes towards team work ($M = 3.2$, $SD = .74$); $t (283) = 4.34$), $P < .01$.

Economics as a subject comprise an aspect which involves mathematics, for instance a topic like National Income Accounting and Determination. Research conducted by Becker, Greene, and Rosen (1990) indicates that, male students generally tend to perform creditably in Mathematics related courses than their female counterparts. With this background, it is pertinent to ransack the existing literatures to ascertain if male students exhibit positive attitudes towards CL than their female counterparts or the other way round in order to for tell how proper steps and plans through CL learning strategies, will help enhance positive and improved academic performance for both sexes in the classroom. Using the descriptive survey design, Farrah (2011) examined students' attitudes using collaborative learning in fostering the writing skills among English Major Students at Hebron University, Palestine. The study's population comprised 95 students offering Writing and Integrated Language Skills as courses. The researchers also investigated the differences in students' attitudes based on gender, their proficiency (GPA) and year of study as well as their learning styles (introverts vs extroverts). A five-point Likert scale questionnaire comprising 32 items was the study's instrument used. Findings showed that students exhibited positive attitudes towards Collaborative learning. Results also showed that females had higher positive attitudes ($M = 3.78$, $SD = .65$) than their male counterparts ($M = 3.38$, $SD = .83$); $t(93) = -2.285$, $p = .025$. Therefore, a statically significant difference between male and female students. The study however did not highlight on the significance level used to test for the difference.

Reda (2015) conducted quantitative research in CL by employing the descriptive survey design. The study's objective was to examine students' attitude towards CL in a psychology class at the Wolaita Sodo University, Ethiopia. In all, 48 participants comprising 30 Female and 18 Males were the population of the study. A five-point Likert scale semi-structured questionnaire, ranging from "strongly disagree" to "strongly agree" was the instrument used for the study. Findings of the study indicated that there was statistically significant difference in terms of attitudes between male and female students. Male students had a higher positive attitude (M = 42.8, SD = 11.59) than their female colleagues (M = 37.2, SD = 10.89); t (46) = 7.09, p = 2.015 (2 tailed). This finding was contrary to findings of Farrah (2011) who discovered that females rather had higher positive attitudes than their male counterparts.

In Ghana, Asare (2016) embarked in a quantitative study to ascertain business students' preference for CL at UCC, Ghana. Descriptive cross-sectional survey design was employed. Using simple random technique, 400 third year business students studying Accounting and Management were selected as the study's sample. An attitude questionnaire was the instrument used. The results conducted showed a no statistically significant difference between the male business students towards CL (M = 3.90, SD = .54) and that of their female counterparts (M = 3.91, SD = .61); t (384) = -.163, p = .871 (p > .5, two tailed). This finding was at tandem with the finding by Mbacho and Changweiywo (2013) who discovered no statistically significant difference between male and female students regarding preference about CL.

Chapter Summary

CL is a teaching and learning technique where students of various skills, talents and experiences work together in groups to achieve a shared objective. It depends on the socially controlled sharing of information among students in groups where each student is responsible for their own learning as well as the groups' achievement towards a common goal. The concept of CL agrees with Vygotsky's cognitive development theory which emphasizes on ZPD. It indicates what learners can do or achieve without the help of their learning colleagues and what they can do or achieve with the assistance from their learning peers. If proper plans are put in place by providing a congenial social environment, the potential growth or achievements of learners is likely to be realized.

Even though CL seem to have a lot of benefits, a search into the existing literature indicates that students do encounter some challenges when they engage in CL activities. Some of these setbacks included the tendency of some working colleagues or group members hijacking discussions, some members not pulling their weight or efforts during discussion, the limited time available for engaging in CL activities due to excessive tasks or workloads in other course work, among other factors. The study also indicated that whiles some researchers discovered that compared to female students, the males showed more positive attitudes towards CL, others saw the opposite. That is, they rather observed that females have higher attitude towards CL than male students. Other researchers also observed no statistically significant difference among female and male students regarding CL

attitudes. It is therefore incumbent and apt for the researcher to embark on this research work to ascertain the authenticity or otherwise of these findings.

CHAPTER THREE

RESEARCH METHODS

Introduction

The study aimed to determine the impact of CL on students' performance in Economics in the SHS in Atiwa West District, Eastern Region. The chapter focuses on the research paradigm, research design, population, sample and sampling techniques, research instruments, pilot study, validity and reliability, data collection procedures and data analysis.

Research Paradigm

The positivist research paradigm underlies this quantitative study. The positivist paradigm expresses belief that in the study of an event or a phenomenon: logic, deductive reasoning and measurement can be utilized to show absolute truth (Rahi, Alnaser, & Ghani, 2019).

The deductive approach involves constructing hypotheses based on an established theory and subsequently designing research methodology to evaluate them (Silverman, 2013). This approach is well-matched with positivist perspective, which permits creation of hypotheses and the statistical testing of anticipated outcomes with a recognized level of probability (Snieder & Larner, 2009). Hence, this study was rooted in the positivist paradigm that employs scientific technique to come out with the truth.

Research Design

The study's research approach was quantitative, adopting quasi-experimental design, that included control, manipulation and experimental groups.

The study used quasi-experimental design, specifically, non-equivalent pre-test, post-test control group. This design was selected on the basis of the nature of study's objectives. Quasi-experimental research is considered a valuable research design due to its capacity to exert reasonable control over various sources of bias, even though it falls short of being a true experimental approach. In most cases, it offers a higher level of robustness compared to pre-experimental designs (McMillan & Schumacher, 2006). In essence, quasi-experimental design allows researchers to manage the treatment conditions but lacks the capability to randomly assign subjects to those treatments, as described by Ary, Jacobs, and Sorensen (2010). As stated by Richard, Clanet, and Quere (2002), an experiment is a scientific inquiry where the researcher manipulates one or more independent variables, maintains control over any other pertinent variables, and then observes how these manipulations impact the dependent variable(s).

In this research design, there are two kinds of groups. There are experimental group/treatment group and control group. The experimental group students (n = 83) were provided treatment (Economics lessons on National Income Accounting and Determination using think pair share and jig saw strategies for six weeks each) and the students in controlled class were taught by traditional teacher-centred method for a duration of 12-weeks, (Ary et al., 2010). In this study, the manipulation involves exposing the experimental groups to think-pair-share instructional and jig saw strategies and the control groups to conventional method. Table 1 provides a systematic description of the design.

Table 1: Nonrandomized Control Group, Pre-test, Post-test Design

Group	Pre-test	Treatment	Post-test
Experimental group (EG)	Y1	X	Y2
Control group (CG)	Y1	-	Y2

Key: Y1 – Pre-assessment of academic performance in Economics

Y2 – Post-assessment of academic performance in Economics

X - Intervention: Jig-saw and Think pair share

This design was adopted because it allows researchers to observe the achievement of students before and after manipulation of the independent variable. Benefits of this approach include the fact that the design proves highly valuable in circumstances where pre-selection or randomization is infeasible, making it well-suited for examining overall population trends. Moreover, it is employed in scenarios where achieving complete experimental control is unattainable.

The quasi-experimental design that includes pre-test and post-tests possesses several inherent shortcomings. Numerous factors, such as maturation, history, instrumentation, and regression, pose threats to internal validity, particularly when a whole group is employed instead of random sampling, as noted by Creswell (2012). However, since Table 1 demonstrates that both groups were not significantly different, and the instruction commenced concurrently for both groups, it is reasonable to assume that the influence of instrumentation can be disregarded. Again, in the context of this study, 8 weeks was not long enough to produce maturity.

Population

All Form 2 Economics students at Kwabeng SHS in the Atiwa West District, made up the study's population. The reason for selecting the form two SHS economics students was that, "a chunk of technical topics in the SHS economics syllables as specified by the curriculum are found at this level of secondary education and they seem to pose a challenge to students anytime questions on such topics are asked in the WASSCE, leading to poor students' performance in the subject" (Chief Examiners Report, 2017, p. 156). Also, at this level (Form 2) students are at the stage of their SHS educational journey where development of their knowledge and understanding in a subject is critical. The researcher did not consider the form one students because most of the topics treated at this level are just basic economics concepts that apparently seem not all that technical and do not pose much threat to students. The researcher also did not consider the form three students because the topic under study is a form two topic hence, they were left out for them to continue in the study of other equally important topics in preparation for the WASSCE. The SHS was chosen since it is the only secondary educational institution offering economics in the district. The study's total population was 164. This is depicted in the Table 2 below;

Table 2: Distribution of Population of Students by Classes

Classes	Males	Females	Population
2 G. Arts 1	9	6	15
2 G. Arts 4	13	5	18
2 G. Arts 2A	19	29	48

Table 2 Continued

2 G. Arts 2B	31	33	64
2 Business	16	3	19
Total	88	77	164

Source: Field data, 2022

Sample and Sampling Procedures

The sample for the study was a list of SHS 2 economics students in a selected school in the Eastern Region. The sample was 164 SHS 2 economics students. As the number was small, the census procedure was employed to include all the students in the study (see Table 3).

Table 3: Sample Distribution of Respondents

Groups	Classes	Males	Females	Population
Control Group	2 G. Arts 1	9	6	15
	2 G. Arts 4	13	5	18
	2 G. Arts 2A	19	29	48
Experiment Group	2 G. Arts 2B	31	33	64
	2 Business	16	3	19

Source: Field data, 2022

Since the study is about quasi-experimental research, proportionate non-randomized sampling technique was employed to select students into control and experiment groups to ensure a fair representation of economics student from each class. A proportional allocation was used to determine and allocate the total number of students from the population to each class. The proportional allocation method was used because the distribution of students in the classes are not even, and thus

this method was employed to ensure that students selected from each class reflected the total number of students in the population of each class.

Data Collection Instruments

The study collected quantitative data from the participants using an Achievement test in Economics and Questionnaire measuring students' perception towards CL (Appendix A & B). Pretest and posttest scores were collected for the achievement test. The researcher developed a self-made achievement test comprising 50 multiple choice items adopted from WEAC past questions on the topic national income accounting and determination was used as one of the instruments of the study. The rationale for adopting the WAEC past questions was to ensure that the test was standardized. This instrument was used to conduct a pre-test in order to assess the level of academic performance of students before the treatment condition. The instrument was subsequently revised with different wordings and positioning and was used as a post-test to assess the level of academic performance after the intervention.

Aside the achievement test, survey instrument (i.e., questionnaires) was utilized to collect data from students in the experimental group about their perception towards use of CL. Questionnaire employed a closed-ended format with a five-point Likert scale, spanning from "strongly disagree" to "strongly agree." The questionnaire was divided into 2 sections. The first section gathered data on demographic profiles of the students which include their gender and age groups. The second part focused on students' perceptions towards CL. This contained 29 items.

Cohen, Manion, and Morrison (2017) noted that questionnaires tend to yield greater reliability due to the anonymity they provide, which encourages greater honesty in responses compared to interviews. Although questionnaires may have certain drawbacks, such as respondents' tendency to overstate their ideas and attitudes in order to appear favorable, and the potential influence of respondents' knowledge, experience, and motivation on the data, they remain a valuable tool. Cohen et al. (2017) emphasize that questionnaires offer relatively straightforward approach to exploring values, attitudes, beliefs and motivations and can be adapted for collecting generalized information from diverse human populations. They also highlight the advantage of high data standardization associated with questionnaires. It is with these advantages in mind that the researcher decided to employ questionnaires as data collection method in the study.

Validity and Reliability of Research Instruments

To guarantee the reliability and validity of the study's instruments, both pre-test and post-tests underwent a peer review process conducted by the supervisor, who possesses expertise in teaching Economics, as well as an independent researcher. Additionally, the supervisor also assessed the questionnaire to confirm its face and content validity.

Following the face and content validation, the instrument underwent pilot test using Economics students from an SHS at Koforidua to determine its usability. The pilot test involved 100 Economics students chosen because they shared same characteristics as that of the Economics students from Atiwa West District. The pre-test score demonstrated an internal consistency coefficient (Kuder-Richardson)

of 0.84, while the post-test score exhibited a coefficient of .79. For the questionnaire, Cronbach Alpha coefficient of internal consistency was used. The co-efficient for pilot test and actual study were .77 and .81, respectively. These co-efficient were within the thresholds (.70 and above) established by scholars (Fraenkel, Wallen, & Hyun, 2012).

Data Collection Procedures

As the study involved human subjects, ethical principles were firmly adhered to throughout the data collection process, which spanned a duration of three months. Prior to commencing data collection, the research proposal received approval from Department of Business and Social Sciences Education at the University of Cape Coast. Furthermore, the University of Cape Coast's Institutional Review Board (IRB) provided ethical clearance, with reference number UCCIRB/CES/2021/148 (see Appendix C). In addition, the researcher submitted introductory letter (see Appendix D) from the department to request authorization from the chosen institution to conduct the study. This introductory letter was used to seek permission from the school's head for the research endeavor.

The introductory letter had a dual purpose: it aimed to secure cooperation and establish a rapport between researcher and the primary study participants, the respondents. Additionally, I obtained informal verbal consent from the class teachers before utilizing their classrooms for both intervention (experimental group) and conventional group (control group). It was emphasized to participants that their involvement was entirely voluntary, and they were free to pull out from the study at any point. Ensuring confidentiality of their responses was a priority,

with participants being informed that their answers would remain confidential, and that no person familiar to them would be granted access to provided data, and no respondent names would be recorded.

Furthermore, achievement test scores and questionnaires were securely stored in an envelope and placed in a cupboard to thwart potential losses. The researcher personally administered intervention to treatment group (experimental group) and employed traditional instruction method for control group. Following the intervention with experimental group, researcher distributed the questionnaires to the students and collected them on the same day, ensuring a 100% return rate.

Pre-Intervention Phase

A pre-test was administered to students who consented and were accessible for participation in the study, utilizing Achievement test focused on National Income Accounting and Determination. The experimental group comprised 83 students, while control group consisted of 81 students. This grouping decision followed Carrey's approach, which involved creating homogeneous groups based on the shared characteristic of low performance in Economics. Subsequently, the initial phase of the programme commenced, which involved activities to facilitate acquaintance, boost their motivation, and provide an overview of the study's objectives, framework, and the regulation and rules governing therapeutic sessions.

Intervention Phase

Experimental group were given interventions (taught national income accounting and determination using jig-saw and think-paired-share learning strategies) for 12 weeks. Each lesson lasted two (2) hours. The experimental group

was instructed through the think-pair-share and jig saw CL model for six (6) weeks each; while control group received instruction through traditional methods of instruction for 12 weeks. In a week, the students were taught twice. Thus, 24 lessons were prepared for the 12 weeks. Upon completing the interventions, a post-test was administered to both groups to measure academic performance of the two groups at the same time.

Think-pair-share CL strategy for six weeks (12 lessons)

Think-pair-share is a CL technique where learners collaborate to address problem or respond to a query related to an assigned reading. Instructors present a question, prompting students to first contemplate their responses independently. Subsequently, they are encouraged to discuss their thoughts with a nearby peer (pair). Finally, these pairs share their discussions with the entire class, facilitating ongoing conversation.

This approach necessitates students to (1) independently contemplate a topic or respond to a question; (2) exchange ideas with fellow students. Engaging in discussions with a partner enhances participation, maintains focus, and immerses students in grasping reading material. It affords students the opportunity for critical thinking, fostering an educational setting that fosters high-quality answers (Rowe, 1972). Think-pair-share enables students to collaborate in teams to achieve a common objective, enhancing their understanding and that of their peers in a supportive setting that encourages learning from errors (Johnson & Johnson, 1999). The following steps were followed in using the think-pair-share strategy

1. *Step 1: Think*: I began the lesson by asking a specific question about the topic "national income accounting and determination". Students "think" about what they know or have learned about the topic for a given period of time. This lasted for about 10 - 15 minutes for each of the lessons in a week.
2. *Step 2: Pair*: Each student was paired with small group of four (4) members. Learners shared their thinking with their partner, discussed ideas and asked questions to their partners about their thoughts on the national income accounting and determination. I asked students to take notes on their partner's procedure/answer. This lasted for about 15-20 minutes for each of the lessons in a week
3. *Step 3: Share*: The pairs shared their definitions, solutions, and examples with another pair, forming a foursome, and engaged in a discussion. I allowed each group to decide among themselves who would present their thoughts, ideas and answers to rest of the class. I provided guidance to students on how to manage their time effectively: I informed them when it was time to switch speakers if they hadn't already, and when they should wrap up their discussions. I requested that students report on behalf of their respective groups during the summary, including any variations in thought processes and whether the group reached a consensus. This lasted for 20–30 minutes for each of the lessons in a week.
4. Finally, I expanded the "share" into a whole-class discussion. This lasted for about 20-30 minutes for each of the lessons in a week.

Jig-saw CL strategy for six weeks (12 lessons)

The jigsaw teaching method involves a collection of topics that students fully develop individually before coming together to form a complete concept. Jigsaw is a collaborative learning approach which empowers each student within a "home" group to focus in a specific part of the topic (Crone & Portillo, 2013). These students then convene with counterparts from other groups who have been allotted same part. After mastering the material, they return to their "home" group to instruct their fellow group members. This tactic essentially turns each student in the "home" group into a portion of a larger puzzle related to the topic (Stanczak et al., 2022).

This CL method allows individuals or small groups to take responsibility for subcategories within a broader topic. The Jigsaw technique proves effective in promoting student interaction with both their peers and the course content. Moreover, it operates on the assumption that students must comprehend the material thoroughly to effectively teach it to their peers, thereby fostering individual accountability. The following steps proposed by Crone and Portillo (2013) were adopted in this current study in teaching national income accounting and determination.

1. *Step one*: The class was split into 4-person jigsaw groups. The groups were varied based on age and gender.
2. *Step two*: A leader was designated from each group, with this individual being the most experienced and mature member of the group.
3. *Step three*: Each day lesson was divided into four (4) segments.

4. *Step four*: Each student was tasked with mastering a specific section, and I made certain that students had direct access to their own segment.
5. *Step five*: I allocated time for students to review their assigned segment on a minimum of two occasions, allowing them to become acquainted with it.
6. *Step six*: I created temporary "expert groups" that consisted of students across home groups (jigsaw group) who read the same assignment excerpt. I provided students within these expert groups with an opportunity to deliberate the key points of their segment and practice their forthcoming presentations to their jigsaw group.
7. *Step seven*: I brought these students (those in the expert group) back into their jigsaw groups.
8. *Step eight*: I asked students (the person who represent the home group at the expert group) to present their segment to the groups. I urged fellow group members to seek clarification by asking questions.
9. *Step nine*: I moved from one group to another, overseeing the procedure.

Post-Intervention Phase

Ultimately, following intervention phase, post-test was conducted for both groups to assess their academic performance levels in Economics using national income accounting and determination whiles the attitude questionnaire were administered to students in the experimental group to assess their perception of cooperative learning after the intervention.

Data Processing and Analysis

The collected data underwent a series of processing steps, including editing, coding, and entry into a Statistical Package for Social Sciences (SPSS) software. Data analysis encompassed descriptive techniques (frequency, percentage, mean and standard deviation) and inferential techniques (including independent sample t-test and paired sample t-test). The achievement test, consisting of 50 items, was scored on a scale of 0 to 100%. The mean and standard deviation were used to analyze research question one, while, research hypotheses one, two, and four (RH 1, 2, and 4) were assessed using independent sample t-tests in determining disparities, based on the pre-test and post-test achievement scores in Economics, between experimental group and control group. Additionally, independent sample t-test was employed to gauge gender differences in economics students' perceptions regarding CL strategies. For research hypothesis three (RH 3), a paired sample t-test was used to ascertain differences between pre-test and post-test scores, aiming to evaluate impact of CL strategies on academic performance of economics students. All inferential statistics was analysed at 95% confidence level and 5% significant level. Table 4, displays a summarized data analysis method.

Table 4: Summary of Data Analysis Plan

	Research Question/Hypotheses	Analysis tools
RQ 1	What is the perception of students towards the use of CL strategies in economics?	Means, Standard Deviation

Table 4 Continued

RH 1	There is no significant difference in pre-test achievement mean scores among economics students in control group and those in the experimental group.	Independent sample t-test
RH 2	There is no significant difference in post-test mean scores among economics students in control group and those in experimental group.	Independent sample t-test
RH 3	There is no significant difference in pre-test and post-test achievement mean scores among economics students in experimental group.	Pair sample t-test
RH 4	There is no significant gender difference in students' perceptions concerning the use of CL strategies in economics.	Independent samples t-test

Source: Fieldwork, 2022

Chapter Summary

This chapter delved into various aspects of the research, including research paradigm, research design, population, sample size, sampling techniques, pilot study, assessments for validity and reliability, data collection instrument and procedures, and the analysis approach. The research falls within the quantitative realm and aligns with the positivist paradigm. A quasi-experimental design was adopted. The study population comprised of 164 economics students, with 19 students in the business class, and 145 in the general arts classes. Given the quasi-experimental design and the presence of unequal class sizes (intact groups), a non-

equivalent pre-test and post-test design was used. The population was split into experiment and control groups using the lottery or census procedure. The data collection instruments used were a 50-item achievement test and a 29-item perception questionnaire focused on the utilization of CL strategies, particularly, Jig-saw and think-pair-share methods. These instruments underwent rigorous checks for internal validity and reliability. Ethical protocols were meticulously observed throughout the data collection process.

A total of 24 lessons on the topic of national income accounting and determination were conducted over a period of 12 weeks, with each lesson lasting 2 hours. The experimental group received instruction using both the think-pair-share and Jig-saw techniques, with 6 weeks dedicated to each method. In contrast, traditional teacher-centered approach was used to teach the control group. Prior to the intervention, pre-test was administered to both groups, followed by post-test after the intervention. Afterwards, data was collected, edited, coded and analyzed to answer one research question and four research hypothesis using the appropriate research tools.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The study aimed to determine the impact of CL on students' performance in Economics in the SHS in Atiwa West District, Eastern Region. This chapter presents and discusses the results and findings that were uncovered through the analysis of the response given by the respondents of this study. The analysis and discussion of the data was carried out based on the results of the research question and hypotheses that guided the study. The chapter is in three sections. The first section presents results on participants' demographic information followed by its discussion, the second section presents results concerning the research question and its discussion, while the third section delves into the outcomes of the research hypotheses and discussion of the results related to them. To facilitate clarity, results are displayed in tables.

Demographic Profile of Respondents

The study collected background information from students who participated in the study, specifically focusing on their gender and age distribution. It is worthy to note that, this background data did not constitute a primary component of our main analysis. The reason for including this background data was to gain insight into the general characteristics of the respondents, rather than for the primary analysis. The researcher analyzed and discussed this data using frequency and percentages. The results are presented in Table 5.

Table 5: Background Information of Respondents

Variable	Category	Frequency	Percentage
Gender	Male	87	53.00
	Female	77	47.00
Age group	Between 15-18yrs	97	59.10
	Above 18yrs	67	40.90
Group	Control group	81	49.40
	Experimental group	83	50.60

Source: Field data, 2022

Table 5 displays demographic profile of the study's participants (i.e., economics students). Out of 164 students, the majority of them were males (n = 97; 53%) while 77(47%) were females. Concerning their age distribution, the majority of the students were within the age bracket of 15-18years (n = 97; 59%) while the rest of them were found to be within age bracket of above 18years. Further, 83 of the students representing 51% were in the experimental group while 81(49%) of them were in the control group.

Main Results and Discussion

This part of the study focuses on main results that pertain to the research question and hypotheses that provided guidance for the study.

Research Question One: What is the perception of students towards the use of CL strategies in economics?

The research question was to determine the perception of students towards the use of CL strategies in economics. Data was collected through a five-point Likert scale, spanning from "strongly disagree" to "strongly agree." To gauge the

students' outlook on CL, a mean criterion was applied, predicated on the five-point Likert scale. A mean score falling within the range of 1.00 to 2.60 was categorized as indicative of a negative perception, range of 2.61 to 3.40 as neutral perception, while scores within the range of 3.41 to 5.00 signified a positive perception towards CL. Table 6 presents the results.

Table 6: Students' Perceptions towards Cooperative Learning in Economics

Working in pairs and groups have?	Mean	SD
1. Helped me achieve a good academic performance	4.58	.50
2. Allowed me to build up my knowledge through other peers' input	4.55	.52
3. Helped me focus on assigned task	4.65	.48
4. Increased my motivation for learning	4.78	.42
5. Increased my creativity in learning	4.47	.50
6. Improved my social and interpersonal skills	4.63	.51
7. Helped me understand the materials	4.60	.49
8. Provided me with a better understanding on economics topic	4.74	.44
9. Helped me to exchange knowledge, information and experience with my friends	4.63	.49
10. Made me solve economics problem easier	4.61	.51
11. Stimulated my critical thinking ability	4.59	.50
12. Provided me with helpful feedback	4.51	.50

Table 6 Continued

13. Helped me responsible –for myself and the group	4.53	.50
14. Improved my communication skills	4.60	.49
15. Made me actively participate in the learning process	4.66	.48
16. Made me have more new friends/make new friends in the class	4.52	.59
17. Increased my team spirit for learning	4.52	.74
18. Wasted my time explaining things to others	4.27	.88
19. Made it difficult for me to actively participate in tasks	4.42	.84
20. Gave me a sense of belongingness in the class	4.37	.69
21. Helped me to develop likeness in coming to school	4.62	.49
22. Helped get along with other group members	4.42	.50
23. I enjoyed working together/learning in groups	4.59	.50
24. For me, group work is a fun learning strategy	4.57	.50
25. Learning in groups is very interesting and entertaining	4.59	.54
26. In my opinion, pair/group work should be encouraged in our schools	4.72	.48
27. I am satisfied with other group members	4.12	.83
28. I am satisfied with learning in group	4.18	.90
29. I am satisfied with working in group	4.24	.93
Average mean/SD	**4.53**	**.16**

Source: Field data, 2022

The results of students in experimental group perception towards CL are presented in Table 6. Generally, it was observed from the results that students in

experimental group have positive perceptions (M = 4.53; SD = .16) towards CL. This result is also characterised within the individual items. For example, the students strongly agreed that that CL creased their motivation for learning (M = 4.78; SD = .42), provided them with a better understanding of economics topic (M = 4.74; SD = .44), made them actively participate in the learning process (M = 4.66; SD = .49), helped them focus on assigned task (M = 4.65; SD = .48), helped them to exchange knowledge, information and experience with friends (M = 4.63; SD = 0.49), improved their social and interpersonal skills (M = 4.63: SD = .51), helped them develop likeness of coming to school (M = 4.62; .49), made them solve economics problem easier (M = 4.61; SD = .51), helped them understand the economics materials (M = 4.60; SD = .49); improved their communication skills (M = 4.60; SD = .49) and stimulated their critical thinking ability (M = 4.59; SD = .50). This further fostered their academic achievement (M = 4.58; SD = .50).

Accordingly, the students positively perceived that pair/group work should be encouraged in our schools (M = 4.72; SD = .48) because group work is a fun learning strategy (M = 4.57; SD = .50) and very interesting and entertaining (M = 4.59; SD = .54). This made them enjoyed working together/learning in groups (M = 4.59; SD = .50) and their satisfied with I am satisfied with working in group (M = 4.24; SD = .93).

This result suggests that students hold favourable thoughts, beliefs, and feelings regarding CL in their economics class. These results validate the findings of prior researchers who have consistently identified students' positive perceptions and attitudes toward CL. For instance, Amedu and Gudi (2017) demonstrated that

final-year students responded positively to the implementation of CL. Akhtar et al. (2012) reached a similar conclusion, affirming that students harbour positive perceptions of CL, signifying their belief in its benefits for their learning. Farzaneh and Nejadansari, (2014) also noted that students recognize the advantages of CL, as it fosters a more dynamic, participative, and exploratory learning environment. The second essential condition for successful CL, a high level of responsibility, was corroborated by Er and AtaÇ (2014) findings, wherein majority of students favoured CL in English Language Teaching (ELT) classes. Moreover, Katawazai and Saidalvi (2020) highlighted that students hold positive perceptions of collaborative learning, which is statistically associated with favourable views of social presence and satisfaction. Consequently, students who perceive a high level of CL tend to exhibit higher satisfaction with their courses compared to those perceiving lower levels of CL. Also, students with heightened perceptions of CL also tend to experience greater social presence.

These findings align with Asare (2016) research, which determined that business students hold positive attitudes toward CL. Respondents supposed benefits of CL encompassed increased socialization, improved working relationships, enhanced academic performance, critical thinking skills, and access to more information. Similarly, Farrah (2011) uncovered positive attitudes among students toward collaborative learning, and Reda (2015) reported that learners expressed positive attitudes toward CL. Recognizing students' perceptions of CL is of paramount importance, as it significantly influences their behaviour. Student perceptions of CL serve as crucial determinants of their emotions and behaviours

within the CL environment, impacting both the overall school climate and individual learning experiences.

Research Hypothesis One: There is no statistically significant difference in the pre-test achievement mean scores among economics students in the control group and those in the experimental group.

The main objective of this research hypothesis was to examine whether significant difference exist in pre-test achievement mean scores among economics students in control group and those in the experimental group. Data was analysed using independent samples t-test. Prior to analysis, the level of students' academic performance was determined. To determine level of academic performance, a mean percentage was established. A score between 0% to 49% was considered low performance, 50% to 74% was considered moderate performance and 75% to 100% was considered high performance in the subject. Table 7, 8 and 9 display the results.

Table 7: Level of Students' Performance in Pre-Test Score

Variable	N	Min	Max	Mean	SD
Pre-test score	164	20.00	80.00	45.77	5.24

Source: Field data, 2022

As indicated in Table 7, students' performance before intervention was very low (M = 45.77; SD = 5.24). The minimum score by the students was 20% while the maximum score was 80%. Yet, the average performance of the students was low 46%. The Table 8 and 9 present results of the Levene test and difference in pre-test score performance of the students based on the two groups, respectively.

Table 8: Levene Test for Difference in Pre-test Score

Variable		F	Sig.	t-value	df	p-value
Pre-test score	Equal variances assumed	.022	.881	-.973	162	.332
	Equal variances not assumed				161.37	.332

Source: Field data, 2022 *Significant @ .05 level

Table 9: Difference in Pre-test Score of Experimental and Control Group

Variable	Group	N	M	SD	t-value	df	p-value
Pre-test score	Control group	81	44.96	5.34	-.973	162	.332
	Experim. group	83	46.55	5.14			

Source: Field data, 2022 *Significant @ .05 level

Regarding Table 8 results, the Levene test was not significant (p = .881) therefore equal variance assumed. As presented in Table 9, results of the independent sample t-test indicate that there is no statistically significant difference between the 2 groups in terms of their pre-test scores. Students in the control group exhibited relatively lower performance (M = 44.96; SD = 5.34) compared to those in the experimental group (M = 46.55; SD = 5.14). Additionally, control group displayed a wider range in their scores compared to the experimental group. This outcome suggests that, before the intervention, the level of academic performance in Economics was relatively lower in control group than in experimental group. Nevertheless, the difference in academic performance between the 2 groups [t(162) = -.973; p = .332] was statistically not significant. This implies that both groups had a similar level of achievement before the intervention, indicating homogeneity

in their academic performance. These results support the idea that, on average, most students performed poorly prior to the intervention. Consequently, the null hypothesis is retained, confirming that there is no significant difference in economics students' academic performance before intervention using Jig-saw and think-pair-share methods. These findings align with prior studies by Gull and Shehzad (2015), Akanmu (2019), and Usman et al. (2018), which similarly found no significant differences in pre-test achievement scores among control and treatment groups in economics. It is concluded from this current study and previous studies that before the interventions (using CL strategies), students' performance in economics was low and equal among both groups.

Research Hypothesis Two: There is no statistically significant difference in the post-test achievement mean scores among economics students in the control group and those in the experimental group.

The main objective of this research hypothesis was to examine whether significant difference exist between economics students in control group and those in the experimental group regarding their post-test achievement mean scores in economics. Data was analysed using independent samples t-test. Prior to the analysis, the level of students' post-test academic performance was ascertained. To determine level of academic performance, mean percentage was established. A score between 0% to 49% was considered low performance, 50% to 74% was considered moderate performance and 75% to 100% was considered high performance in the subject. Table 10, 11 and 12 present the results.

Table 10: Level of Students' Performance in Post-Test Score

Variable	N	Min	Max	Mean	SD
Post-test score	164	32.00	96.00	66.21	8.59

Source: Field data, 2022

As depicted in Table 10, lowest score of the students, in both control and experimental groups, after the intervention was 32% and the highest score was 96%. The mean score was 66.21. This result indicates that students' performance in both groups has improved significantly after the treatment. To assess the difference in performance among the 2 groups, the independent sample t-test was employed. Table 11 and 12 displays the results.

Table 11: Levene Test for Difference in Post-test Score

Variable		F	Sig.	t-value	df	p-value
Post-test score	Equal variances assumed	6.21	.014	-21.68	162	.000
	Equal variances not assumed			-21.60	143.96	.000

Source: Field data, 2022 *Significant @ .05 level

Table 12: Difference in Post-test Score of Experimental and Control Group

Variable	Group	N	M	SD	t-value	df	p-value
Post-test score	Control group	81	51.26	5.04	-21.60*	143.96	.000
	Experim. Group	83	80.80	3.58			

Source: Field data, 2022 *Significant @ .05 level

As illustrated in Table 11, the Levene test was significant (p = .014) therefore equal variances not assumed. Regarding Table 12, results of the independent samples t-test unveiled a significant difference between the two groups

in terms of post-test achievement scores in Economics. Post-test mean score for the control group academic performance was (M = 51.26; SD = 5.04), while experimental group was (M = 80.80; SD = 3.58). Performance of students in both groups exhibited remarkable improvement. Following analysis using the independent sample test, the performance gap between the experimental group and the control group reached a statistically significant level [t(143.96) = -21.60; p = .000]. These findings indicate a substantial positive difference in the performance of students in experimental group who were taught via Jigsaw model and think-pair-share model compared to control group students, who received traditional teaching for the topic of national income accounting and determination in economics.

In conclusion, after the intervention, students in the experimental group attained a significantly higher mean score compare to those in control group. This implies that utilization of think-pair-share and jigsaw model significantly enhances students' achievements in national income accounting and determination as a topic in economics. These results suggest that the Jigsaw model and think-pair-share model, as cooperative teaching and learning strategies, are effective in improving academic performance of economics students. Consequently, the null hypothesis, which posited that "there is no statistically significant difference in post-test achievement mean scores among economics students in the control group and those in experimental group," was rejected. These findings align with the research of previous scholars who have employed CL strategies like the Jigsaw model and think-pair-share model to enhance economics students' academic performance.

According to Akanmu (2019), the application of think-pair-share greatly improved the performance of students in the experimental group as evidenced by the post-test mean scores of the experimental groups being significantly higher than those of the control group.

This outcome aligns with findings of the study conducted by Napitupulu and Surya (2019), which explored the effect of think-pair-share on students' academic performance in mathematics, all concluding that it effectively improved students' academic performance. Additionally, Hossain and Tarmizi (2013) revealed that performance of experimental group was significantly better than that of control group, indicating that CL positively influences students' mathematics achievement. Similarly, Usman et al. (2018) found that compared to students in the control group, students in the experimental group had significantly higher mean scores, highlighting the significant improvement in students' achievement in economics using Jigsaw model.

Research Hypothesis Three: There is a no statistically significant difference in the pre-test and post-test achievement mean scores among economics students in experimental group.

The objective was to assess the impact of CL strategies (Jigsaw and think-pair-share model) on academic performance of students in economics using national income accounting and determination as a topic. Thus, whether students' academic performance in national income accounting and determination would improve using CL strategies. Using a paired sample t-test, it was determined

whether the students in the experimental group's pre-test and post-test mean scores differed. The results are indicated in Table 13.

Table 13: Difference in the Post-Test and Pre-test Score of Experimental Group

Score				Paired differences				
	N	Mean	SD	MD	SD	t-value	df	p-value
Post-test	164	66.21	8.59					
				20.44	7.59	17.237*	163	.000
Pre-test	164	45.77	5.24					

Source: Field data, 2022 *Significant @ .05 level

Table 13 displays the outcomes of the paired sample t-test, which assessed differences in pre-test and post-test scores regarding academic performance in economics using national income accounting and determination among students in the experimental group. This assessment allowed the researcher to determine whether there were distinct changes in the performance of experimental group between pre-test and post-test phases. Table 13 revealed that the mean difference (MD) between two tests for academic performance in economics using national income accounting and determination among students was 20.44 (SD = 7.59). This distinction became statistically significant [t(163) = 17.237; p = .000]. These significant findings indicate that the interventions, employing the Jigsaw and think-pair-share CL strategies, significantly improved students' academic performance in economics (national income accounting and determination). Consequently, academic achievement of experimental group students was positively influenced

by the use of Jigsaw and think-pair-share models. The null hypothesis was hence rejected.

Jigsaw model is a CL technique that breaks down complex topics into smaller, interconnected components. Each student in a group becomes an expert in a specific piece of the topic and subsequently teaches it to the other group members. This approach reduces conflicts among students, fosters enhanced learning, increases student motivation, and enhances the overall learning experience.

Conversely, Think-Pair-Share is a CL activity suitable for various class sizes and subjects. Instructors introduce a question, prompting students to first contemplate their response individually before engaging in discussions with a nearby peer (PAIR). Following this, the groups SHARE with the entire class their discussions, facilitating further discourse. This approach encourages critical thinking, establishing learning environment that inspires high-quality replies. Think-Pair-Share offers students the opportunity to collaborate towards a common goal, deepening their own understanding while contributing to the learning process in a supportive environment that allows for mistakes (Johnson & Johnson, 1999).

The results propose that utilization of CL as an instruction method has a positive impact on academic achievement of students. These findings make it evident that both the Jigsaw and think-pair-share models of CL have significantly improved academic performance of students in economics. The study's outcomes corroborate previous research findings that employed both the Jigsaw and think-pair-share models as CL strategies to improve students' academic performance in economics and mathematics. The results are consistent with Usman et al. (2018)

discovery that there was a significant difference in students' achievement scores in economics, indicating that the use of the Jigsaw model significantly improved the results of experimental students. Similarly, these findings align with Gull and Shehzad (2015) study, which also demonstrated a significant difference in economics achievement scores among pre-test and post-test when using think-pair-share model. Think-pair-share instruction, according to Akanmu (2019), increased students' mathematics performance.

The Jigsaw and think-pair-share models are among the CL strategies suitable for the teaching and learning of economics (Marburger, 2005; Sahin, 2010). This approach facilitates collaborative work among students, enabling them to share and exchange ideas during teaching and learning processes in the classroom. These findings are consistent with earlier studies that demonstrated positive effects of the Jigsaw model on students' academic achievements (Sahin, 2010). As a result, this model can be effectively employed by teachers, particularly those teaching economics, to enhance student achievements and learning styles.

The study's findings also reveal enhancements in students' problem-solving abilities in economics, including statistical analysis and mathematical formulas. Additionally, students' comprehension of economic concepts improved, and the quality of CL in problem-solving was notably high. Furthermore, this study found a positive shift in students' attitudes toward the learning process in the classroom after using Jigsaw model. Research by Gillies (2016), Hennessy and Evans (2006), Johnson et al. (2000), Bukunola and Idowu (2012), support these findings.

Research Hypothesis Four: There is no significant gender difference in students' perceptions concerning use of CL strategies in economics.

The objective of research hypothesis four was to determine any gender difference in students' perceptions of the use of CL. Independent samples t-test was used to analyze the data that was obtained. Gender of students was independent variable and their perceptions towards CL was the dependent variable. Table 14 and 15 presented the results.

Table 14: Levene Test for Difference in Perception of CL

Variable		F	Sig.	t-value	df	p-value
CL Percept.	Equal variances assumed	3.58	.062	1.97	81	.384
	Equal variances not assumed			1.92	67.64	.384

Source: Field data, 2022 *Significant @ .05 level

Table 15: Gender Difference in Perception of CL among Experimental Group Students

Variable	Group	N	M	SD	t-value	df	p-value
Perception towards CL	Male	45	4.36	.17	1.97	81	.384
	Female	38	4.32	.20			

Source: Field data, 2022 *Significant @ .05 level

From Table 14, the Levene test was not significant (p = .062), therefore equal variances assumed. The results as presented in Table 15, indicate that male students' perception of CL (M = 4.36, SD = .17) are not statistically different from female students perception of CL (M = 4.32, SD = .20); t(81) = 1.97, p = .384 (two-tailed). These results signify that the mean scores of male and female students do

not differ significantly. Consequently, it is evident that both male and female students share similarly positive perceptions toward CL, hence the null hypothesis was retained. These findings align with the study conducted by Hossain and Tarmizi (2013), and Asare (2016), which also found no statistically significant difference in perceptions of CL between male and female students. Hence, both male and female students hold equally positive perceptions of CL.

Contrary to these findings, Kaenzig et al. (2007), Farrah (2011), and Reda (2015) reported that male and female student's perceptions of CL differed significantly. Compared to male students, female students had more negative attitudes regarding CL, according to Kaenzig et al. (2007). However, in present study, economics students demonstrated a positive perception of CL. Both male and female students recognize the value of CL, leading to their positive perceptions. If students were to have an undesirable attitude toward CL, it could suggest that the environment is not adequately set up to facilitate an enjoyable learning experience for them. While Farrah (2011), and Er & AtaÇ (2014) found that students generally had positive perceptions of CL, this study does not support the idea of significant differences between male and female students. Thus, regarding this study, students' positive perceptions of CL do not appear to be influenced by gender. Reda (2015) identified a statistically significant difference between male and female students, with the former, having a more positive attitude. However, this statistically significant difference is not supported by the present study's findings.

Chapter Summary

The study examined the impact of CL on students' performance in Economics in the SHS in Atiwa West District, Eastern Region. The findings clearly

show that students hold favourable thoughts, beliefs, and feelings regarding CL in their economics class. Students' performance before intervention was very low. Also, there is no statistically significant difference between the control and experimental groups in terms of their pre-test scores. The findings of the study also revealed a significant difference between the two groups in terms of post-test achievement scores in Economics. Moreover, the study's finding indicated that the interventions, employing the Jigsaw and think- pair-share CL strategies, significantly improved students' academic performance in economics. Finally, the findings of the study revealed that male students' perception of CL are not statistically different from female students perception of CL.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

Introduction

This chapter encompasses summary of the research methodology, while also providing a concise overview of the principal discoveries. Conclusions were derived from these key findings, and recommendations were subsequently formulated based on these conclusions.

Summary of the Study

The study assessed the impact of CL on students' performance in Senior High School Economics. One research question and four hypotheses steered the study. A quantitative approach, using quasi-experimental design (pre-test and post-test with control groups) was employed. The population was 164 economics students with 19 students in business class and 145 in the general arts classes. The population was divided into experiment (n = 83) and control (n = 81) groups using lottery methods and census procedure. The data collection instruments were a 50-item achievement test and a 29-item perception questionnaire on the use of CL strategies particularly, Jig-saw and think-pair-share method. The instruments were checked for internal reliability and validity. Ethical measures for collecting data were strictly followed.

In all 24 lessons on the topic national income accounting and determination were taught for a period of 12 weeks (2 hours per lesson). Both think-pair-share and Jig-saw techniques were used to teach the experimental group for 6 weeks each. The traditional teacher-centered method was used to teach the control group for 12

weeks. Pre-test was administered to both groups preceding the administration of the intervention and post-test, after intervention. Afterwards, data was collected, edited, coded and analyzed to answer one research question and four research hypothesis using the appropriate research tools. Frequency, percentage, mean, standard deviation, independent sample t-test and pair sample t-test were employed to analyse the data.

Key Findings

1. Students have positive perceptions towards CL. It increased their performance, motivation for learning, understanding of economics concepts, engagement in learning process, knowledge, information and experience sharing, social, and interpersonal and communication skills, critical thinking skills, team work spirit. They enjoyed and were satisfied with CL classroom environment.
2. Students' performance in economics (using national income accounting and determination) prior to intervention was low. There was no statistically significant difference in pre-test achievement mean scores between students in experimental group and control group.
3. Students' performance in economics improved significantly after the intervention. There was statistically significant difference in post-test achievement mean scores between students in experimental and the control group. The students in experimental group perform well compared to the students in control group.

4. Cooperative learning strategies (think-pair-share and jigsaw) significantly improve students' academic performance in economics. Jigsaw and think-pair-share are effective strategies for improving students learning in economics.
5. There was no statistically significant difference in the perceptions of students in the experimental group towards CL based on gender.

Conclusions

The study delved into outcomes of employing CL models (specifically the jigsaw and think-pair-share models) in teaching and learning of economics at SHS. The results revealed a substantial and positive transformation in the students' achievements in economics, particularly in the realm of national income accounting and determination, following implementation of jigsaw and think-pair-share models during teaching and learning processes. The pivotal factor contributing to these constructive changes in economics students' academic performance was the utilization of jigsaw and think-pair-share models of CL. This research distinctly established a noteworthy positive disparity of students in experimental group academic performance, against those in control group. There was a marked and affirmative enhancement in the students' learning outcomes when taught through the jigsaw and think-pair-share models in contrast to the traditional teaching approach.

These results suggest that the pronounced improvement in students' mathematical achievements and their attitudes toward mathematics, as reflected in experimental group post-test mean scores, can be ascribed to the significant impact

of CL. Students evidently exhibit a preference for acquiring economics knowledge through collaborative sharing and exhibit a sense of fulfillment when they can effectively collaborate within a group setting. It is the hope that these research findings may provide valuable insights for policymakers and educators, aiding them in the promotion of CL practices within economics classrooms. Moreover, this study has contributed an effective alternative approach to enhancing students' performance in economics through the adoption of jigsaw and think-pair-share models, particularly in tackling economics-related problems. These findings are especially beneficial for students with lower academic performance, as these CL models can empower them to elevate their scholastic achievements. Additionally, the jigsaw and think-pair-share models facilitate cooperative teamwork among students, which in turn enhances their comprehension of economics concepts.

In conclusion, this study determined that students harbor positive beliefs and sentiments regarding application of CL strategies within economics classroom. They firmly believe that utilization of jigsaw and think-pair-share models augments their academic performance, motivation for learning, comprehension of economics concepts, engagement in learning process, and sharing of knowledge, information, and experiences. Furthermore, these CL strategies foster development of social, interpersonal, and communication skills, critical thinking abilities, and teamwork spirit among students. It is evident that students derive satisfaction and enjoyment from the CL classroom environment. These affirmative perceptions among students underscore their willingness to embrace and endorse CL. Consequently, CL strategies warrant further exploration to ensure that students acquire the essential

teamwork skills necessary for success in the corporate world. Nonetheless, it is imperative to acknowledge that while students exhibit positive perceptions towards CL, not all CL activities may be equally favoured. Thus, to sustain these favourable perceptions among students, diligent attention must be directed towards understanding and addressing the dynamics of group interactions during CL, which may occasionally impede students' progress within collaborative work settings.

Furthermore, the discovery that perceptions of CL are not statistically significantly different between male and female students signifies that both genders similarly harbour favourable beliefs, attitudes, and sentiments regarding CL. Consequently, it is advisable to inspire collaborative efforts between both genders when engaging in academic endeavours where appropriate.

Recommendations

The study's findings propose some vital actions that are necessary in nourishing students' preference for cooperative learning. Accordingly, considering these findings, these suggestions were put forth.

1. It is recommended that curriculum developers especially the National Council for Curriculum and Assessment (NaCCA) must incorporate the use of cooperative learning strategies specifically the jigsaw and the think-pair-share methods in the economics curriculum since students have a disposition towards its use.
2. Economics teachers should firmly incorporate CL strategies especially the jigsaw and think-pair-share methods in their pedagogies, because students have a positive disposition towards this instructional approach. This

integration would aid them in acquiring more knowledge, cultivating crucial social skills, and elevating their academic accomplishments. When implementing CL strategies, teachers should ensure that all elements of the strategy are effectively integrated.

3. Finally, economics teachers should not give preferential treatment to both female and male students when adopting the CL strategy in delivery of their lessons.

Suggestions for Further Research

The impact of CL on students' performance in Senior High School Economics was investigated in this study. The research approach employed for data collection and analysis was quantitative. It is suggested that a study can be conducted on: effect of CL strategies on students' academic performance in economics using longitudinal study, using the same topic but adopting a mixed method design and employing same topic but involving more selected schools

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APPENDIX A

Achievement Test in Economics

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF HUMANITIES AND SOCIAL SCIENCES EDUCATION
DEPARTMENT OF BUSINESS AND SOCIAL SCIENCES EDUCATION

QUESTIONNAIRE FOR S.H.S ECONOMICS STUDENTS

This questionnaire is to help the researcher to collect data on the impact of cooperative learning on students' economics achievement. The study is solely for academic purposes. Please, kindly provide sincere and objective responses to the questions. I assure you that any information provided will be treated as strictly confidential.

SECTION A: Demography of Respondents

Please put a chick mark (✓) where appropriate in the box corresponding to your choice concerning each statement.

1. Sex Male [ ] Female [ ]
2. Programme G. Arts [ ] Business [ ] Home economics [ ]
3. Age group (b) Below 15yrs [ ] (b) 15-18yrs [ ] (c) Above 18yrs [ ]

4. Form .....

SECTION B:

INSTRUCTION(S): This section comprises 50 multiple choice questions on the economics topic National Income Accounting and Determination. Kindly, read through and choose the best answer by circling the right option.

1. Income, Output and expenditure methods are used for calculating
   a. National income
   b. National revenue
   c. Population
   d. Total revenue
2. The following reasons necessitate the measurement of National income except
   a. Basis for aid and technical assistance
   b. Delineation of constituencies
   c. For economic planning
   d. Measurement of economic progress

3. The money value of goods and services produced in a country in a year defines the
   a. Gross domestic income
   b. Gross national income
   c. Net domestic income
   d. Net national income
4. Which of the following is a transfer payment?
   a. Dividend paid to shareholders
   b. Interest paid on a bank loan
   c. Pension paid to retired workers
   d. Unfavorable weather conditions
5. If population grows faster than the Gross National Product
   a. Interest rates will fall
   b. Per capita income will fall
   c. Profit will fall
   d. Wages will fall
6. When the net factor income from abroad is added to the Gross domestic product, the result is
   a. Gross national income
   b. Gross national product
   c. Net domestic product
   d. Net national income
7. Per capita income in a country is measured by
   a. Adult population ÷ net national product
   b. Net national product ÷ adult population
   c. Net national product ÷ total population
   d. Total population ÷ net national product
8. The difference between the Gross national product and the Gross domestic product is

8. The difference between the Gross national product and the Gross domestic product is
   a. Capital consumption allowance
   b. Indirect taxes plus subsidies
   c. Net factor income from abroad
   d. Net income of nationals abroad

9. The real measure of a country's standard of living is the
   a. Gross domestic product
   b. National consumption
   c. National product at market price
   d. Per Capita income
10. In computing the national income using the income approach, which of the following is not measured?
   a. Government purchases
   b. Profit
   c. Rents
   d. Wages and salaries

11. Intermediate transactions are excluded from the calculation of the national income because
   a. Their values cannot be accurately calculated
   b. Their values are unstable
   c. There is the need to avoid double counting
   d. There is the need to inflate the aggregate
12. If the Gross national product (GNP) of a country is given as $40,000 and depreciation is given as $5,000 the net national product (NNP) is
   a. $ 8,000
   b. $35,000
   c. $40,000
   d. $45,000
13. There is an increase in the per capita income when
   a. A country has plenty of national resources that are not exploited
   b. Population and national income grows at the same rate
   c. Population grows faster than national output
   d. The Gross national income grows faster than population
14. The problem of double counting in national income accounting occurs when the cost of
   a. Both raw materials and the finished products are included
   b. Intermediate products are deducted from the cost of the finished product
   c. Raw materials are deducted from the cost of the finished product
   d. The finished product increases as a results of higher cost of production

15. Which of the following is the reason for measuring national income at constant prices? To
    a. Eliminate the effect of inflation on the value of output
    b. Measure national income accurately
    c. Minimize problems of double counting
    d. Remove discrepancies in the calculation
16. Consumption is mainly determined by the size of the
    a. Firm
    b. Income
    c. Labour force
    d. Market
17. Net export is a positive figure when a country's
    a. Exports exceed imports
    b. Imports exceed exports
    c. Imports are adjusted upwards
    d. Stock of goods is declining
18. Which of the following will be included in the national income estimate?
    a. A house built and occupied by the owner
    b. Grants to students
    c. Remittances to one's parents

d. Services to housewives

19. Appreciable increase in per capita income reveals that the standard of living is
    a. Average
    b. Constant
    c. Low
    d. Rising
20. Which of the following items are not included in measuring national income through the income approach?
    a. Profit of companies
    b. Rent on property
    c. students' grants and scholarships
    d. wages and salaries of public servants
21. Real Gross national product (GNP) is normally measured in
    a. Constant prices
    b. Current prices
    c. Factor cost
    d. Market prices
22. In estimating national income, transfer payments are not included because
    a. The recipient do not contribute to current production
    b. They represent in financial transactions
    c. They understate the national income
    d. They cause a redistribution of income
23. The proportion of any additional income that is saved is referred to as
    a. Average propensity to save
    b. Consumption to saving ratio
    c. Marginal propensity to save
    d. Savings function
24. If Gross investment in a country is greater than depreciation, then the economy is
    a. Declining
    b. Expanding
    c. Fluctuating
    d. Static
25. Given the equation C=30 + 0.8Y, what is the value of consumption expenditure when Y= ¢200 million
    a. ¢160m
    b. ¢170m
    c. ¢190m
    d. ¢230m
26. In the consumption function C=m+nY, which of the following is the dependent variable?
    a. m
    b. n
    c. C

d. Y

27. The national income of a country in 2015 was $18 million while its population was 6,000 for the same year, what was its per capita income?
    a. $1,740
    b. $3,000
    c. $18.6 million
    d. $108.0 million
28. The equilibrium level of income in a closed economy without any government activity requires that
    a. Consumption is equal to investment
    b. Investment is equal to savings
    c. Savings are equal to taxes
    d. Taxes are equal to consumption
29. If net export of an economy rise, the equilibrium level of income will
    a. Fall
    b. Fluctuate
    c. Rise
    d. Stabilize
30. In the basic circular flow model
    a. Firms demand goods and services
    b. Firms supply financial capital
    c. Households demand financial capital
    d. Households demand goods and services
31. When the gross national production is adjusted for inflation, the result is
    a. Nominal gross national product
    b. Nominal national product
    c. Real gross national product
    d. Real net national product
32. The expression C=f(Y) means that
    a. C depends on Y
    b. C has the same value as Y
    c. Y depends on C
    d. Y and C have no relationship
33. Net national product (N.N.P) excludes
    a. Depreciation
    b. Rent
    c. Taxes
    d. Wages
34. Gross national product (G.N.P) minus Gross Domestic Product equals
    a. Depression
    b. Net investment
    c. Net income from abroad
    d. Net national income
35. Which of the following is normally subtracted in estimating the Gross national product using the expenditure approach?
    a. Consumption

b. Export
c. Import
d. Investment

36. To avoid double counting while estimating the national income, it is normal to ignore
    a. Capital formation
    b. Intermediate goods
    c. Import of raw materials
    d. Subsistence products
37. Which of the following is normally used to compare standard of living between countries?
    a. Gross national income
    b. National income per head
    c. Net national income
    d. Real national income
38. Disposable income is normally split into
    a. Consumption and transfer
    b. Consumption and transfer payment
    c. Saving and consumption
    d. Savings and interest payments
39. Which of the following is equivalent to the national income?
    a. Gross national production at factor cost
    b. Gross national product at market prices
    c. Net national product at market prices
    d. Net national product at factor cost
40. If the marginal propensity to save is 0.25, then the simple multiplier is
    a. 1.30
    b. 2.75
    c. 4.0
    d. 5.0
41. If the simple investment multiplier is 5, by how much will national income change if investment increases by ¢2 million? National income will
    a. Decrease by ¢2 million
    b. Fall by ¢5 million
    c. Increase by ¢5 million
    d. Rise by ¢10 million
42. National income aggregates of one year can be compared with that of other years only when they are presented at
    a. Constant prices
    b. Current price
    c. Factor cost
    d. Market prices
43. Adjusting Gross domestic product at factor cost to net national product at factor cost involves
    a. Adding indirect taxes and subtracting subsidies

b. Adding net property income from abroad and subtracting depreciation
c. Subtracting net property income from abroad
d. Subtracting total depreciation

44. The income that is available to the individual after all taxes have been deducted is
a. Average income
b. Disposable income
c. Taxable income
d. Total income

45. In computing the national income, if the total cost of flour is added to the total cost of bread, the result will be
a. A market price
b. Depreciation
c. Double counting
d. High investment

46. Disposable income is
a. Personal income plus payroll taxes
b. Personal income plus divided payments
c. Personal income minus personal income tax
d. Personal income minus personal savings

47. The Gross national product is not an accurate measure of the national product because it
a. Does not take care of double counting
b. Does not make allowance for personal savings
c. Ignores taxes paid on income
d. Includes depreciation

48. The difference between the Gross domestic product and net domestic product is
a. Capital expenditure
b. Depreciation allowances
c. Foreign investment
d. Income leakage

49. The market value of final goods and services produced in a year is the
a. Current domestic product
b. Gross domestic product
c. Market domestic product
d. Net domestic product

50. The marginal propensity to consume is the
a. Consumption of marginal workers
b. Consumption of those living at the margin of subsistence
c. Percentage of additional income consumed
d. Percentage of income consumed

END OF PAPER

APPENDIX B

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF HUMANITIES AND SOCIAL SCIENCES EDUCATION
DEPARTMENT OF BUSINESS AND SOCIAL SCIENCES EDUCATION

Questionnaire for SHS Economics Students

SHS Economics Students' Perception of Cooperative Learning

Dear Respondent

I am conducting a study on "***Students' Perception of Cooperative Learning in Economics in the Senior High Schools in the eastern region of Ghana"***. The study aims to measure your concerns about cooperative learning in Economics. I humbly ask you to help me fill this questionnaire objectively and frankly. It should take about 10-15 minutes of your time. Your participation is totally voluntary and that you may withdraw from this study at any time without penalty. Your confidentiality and anonymity will be kept and any information provided will strictly be used for academic purpose ONLY.

SECTION A
Background Information

1. Gender (a) Male [ ] (b) Female [ ]

2. Age group (b) Below 15yrs [ ] (b) 15-18yrs [ ] (c) Above 18yrs [ ]

SECTION B
Students' Perception towards Cooperative Learning

Please, indicate the extent to which you agree or disagree with the following statement by ticking

1=Strongly Disagree (SD)
2=Disagree (D)
3=Undecided (UN)
4=Agree
5=Strongly Agree

SN	Statement	SD 1	D 2	UN 3	A 4	SA 5

	Working in pairs and groups have……..					
1	helped me achieve a good academic performance					
2	allowed me to build up my knowledge through other peers' input					
3	helped me focus on assigned task					
4	creased my motivation for learning					
5	increased my creativity in learning					
6	improved my social and interpersonal skills					
7	helped me understand the materials					
8	provided me with a better understanding on economics topic					
9	helped me to exchange knowledge, information and experience with my friends					
10	made me solve economics problem easier					
11	stimulated my critical thinking ability					
12	provided me with helpful feedback					
13	helped me responsible –for myself and the group					

SN	**Statement** **Working in pairs and groups have……..**	**SD 1**	**D 2**	**UN 3**	**A 4**	**SA 5**
14	improved my communication skills					
15	made me actively participate in the learning process					
16	made me have more new friends/make new friends in the class					
17	increased my team spirit for learning					
18	wasted my time explaining things to others					
19	made it difficult for me to actively participate in tasks					
20	gave me a sense of belongingness in the class					
21	helped me to develop likeness in coming to school					
22	helped get along with other group members					

23	I enjoyed working together/learning in groups					
24	For me, group work is a fun learning strategies					
25	Learning in groups is very interesting and entertaining					
26	In my opinion, pair/group work should be encouraged in our schools					
27	I am satisfied with other group members					
28	I am satisfied with learning in group					
29	I am satisfied with working in group					

APPENDIX C

Ethical Clearance Letter

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: [illegible]
E-MAIL: [illegible]
OUR REF: UCCIRB/A/2016/1298
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0009096

1ST APRIL, 2022

Mr. Godfred Boachie Agyemang
Department of Business and Social Sciences Education
University of Cape Coast

Dear Mr. Agyemang,

ETHICAL CLEARANCE – ID (UCCIRB/CES/2021/148)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research **Assessing the Impact of Cooperative Learning on Students' Economics Achievements in Senior High Schools in Ghana: A Quasi Experimental Study in the Eastern Region.** This approval is valid from 1st April, 2022 to 30th March, 2023. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST

APPENDIX D

Introductory Letter

Department of Business and Social Sciences Education

University of Cape Coast

Cape Coast.

2nd September 2021.

The Chairperson

Institutional Review Board

University of Cape Coast

Cape Coast.

Dear Sir,

ACCEPTANCE OF PROPOSAL

I formally bring to your notice that I am satisfied with the research proposal of Godfred Boachie Agyemang and have permitted him to apply for ethical clearance from IRB to enable him to collect data for his M.Phil thesis.

I am counting on your usual cooperation.

Thank you

Yours faithfully,

DR. BERNARD YAW SEKYI ACQUAH

Co-Supervisor

APPENDIX E

Proposal Acceptance Letter

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF HUMANITIES & SOCIAL SCIENCES EDUCATION
DEPARTMENT OF BUSINESS & SOCIAL SCIENCES EDUCATION
UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: DoBSSE/37/V.1/68
Your Ref:

DATE: 16th September, 2021

The Chairperson
Institutional Review Board
University of Cape Coast
Cape Coast

Dear Sir,

ACCEPTANCE OF PROPOSAL

We formally bring to your notice that the Department is satisfied with the research proposal of Mr. Godfred Boachie Agyemang, and has accordingly given the said candidate the permission to apply for ethical clearance from IRB in order to enable him to undertake data collection.

He is working on the Research Topic: **"ASSESSING THE IMPACT OF COOPERATIVE LEARNING ON STUDENTS' ECONOMIC ACHIEVEMENT IN SENIOR HIGH SCHOOLS IN GHANA. A QUASI-EXPERIMENTAL STUDY IN THE EASTERN REGION."**

We count on your usual cooperation.

Thank you.

Yours faithfully,

DR. BERNARD Y.S. ACQUAH
HEAD