

UNIVERSITY OF CAPE COAST

STUDENTS' AND TEACHERS' PERCEIVED DIFFICULTIES WITH SENIOR
HIGH SCHOOL ECONOMICS TOPICS IN CENTRAL REGION, GHANA

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HIGH SCHOOL ECONOMICS TOPICS IN CENTRAL REGION, GHANA

BY

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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: Christopher Yaw Kwaah

Supervisors' Declaration

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

Principal Supervisor's Signature: Date:

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ABSTRACT

This study focused on students and teachers perceived difficulties of topics in the senior high school economics syllabus in senior high schools in Central Region of Ghana. Data was obtained with the Economics Students Questionnaire, Economics Teachers Questionnaire, administered to 468 students and 32 teachers respectively. Focus group interview protocol and Interview protocol were used to collect some qualitative data from students and teachers as a follow up after the survey.

The data collection was done after senior high schools which offered economics in Central Region were categorized into high performing and low performing schools based on individual performance in WAEC examinations for four consecutive years and three schools under each school category randomly selected. Two final year classes were randomly selected. All economics teachers in the selected schools formed part of the study.

Major topics students and teachers perceived to be difficult were: “Substitution and income effect”, “National income accounting”, “National income determination” and the “Multiplier concept and measurement of data”. Both students and teachers cited some reasons for these difficulties and suggested measures to overcome such difficulties. Two hypotheses were tested to find out whether gender and the offering of mathematics have effect on students learning of economics.

It was, therefore, recommended that the Ghana Education Service should consider the introduction of some economics concepts in the Junior High School curriculum for students to have some basic economics concepts before SHS.

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Work of this nature cannot be attributed to the sole effort of one person. Many individuals in diverse ways have made invaluable contributions to this work from its inception to its conclusion.

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DEDICATION

I dedicate this work to my beloved ones Sherry Adelaide Kwaah and
Christopher Kwaah Jnr

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CHAPTER ONE

INTRODUCTION

Background to the Study

Ghana as a former British colony had its educational system modelled after the British system until 1987. It took Ghana many years after the controversy surrounding the studying of economics in schools in Britain around 1960s had settled to consider the introduction of economics into the secondary school curriculum. Besides the British influence, Ghanaians had certain stereotypes associated with the study of economics. For example, it was felt that economics had to do with miserliness and nobody wanted to train his/her offspring to be a miser. It was not until 1966 that economics gained recognition as a school subject in Ghana (Dare, 1995).

Economic education received much attention not only in Britain but in other advanced countries such as USA. For example, in 1891, the American Economic Association (AEA) which was formed in the same year in ~~US~~ the United States (US) considered the teaching of economics to be an important subject for discussion and debate (Salemi & Siegfried, 1999). Hence, the founders of AEA set a goal to educate public opinion about economic questions and economic literature (Becker ~~and~~ & Watts, 1998). As economics began to emerge as a separate discipline from social science towards the end of the nineteenth century, more academics in the US began devoting their attention to the problems of teaching economics, and therefore economics

found itself in the curriculum of many colleges and universities (Hinshaw & Siegfried, 1991). In ~~UK~~the United Kingdom (UK), economics was an established university academic subject, at the time of its introduction into high schools during the mid-1930s (Szreter, 1967).

According to Szreter (1967), most people in the UK felt that economics was an ivory tower preserve hence; it was even dangerous to introduce economics below the university level. Robbins (1955), a professor of economics was one of the opponents of the introduction of economics in the secondary school curriculum in the UK. His view was that economics was a subject for adults and that children could not be expected to possess the knowledge to understand its assumptions and the real world to which they referred. This objection was effectively countered by other economists like E. R. Emmett and Sir A. Carr-Saunders (Szreter, 1967). The picture for the introduction of economics in high schools in the UK had changed by mid-1940s. There was a rapid expansion in economics as a school subject. But this trend of affairs again provoked a controversy. The question now was more on the “teachability” of economics to secondary school students rather than “desirability” (Szreter, 1967).

In spite of the initial setbacks to the introduction of economics in secondary schools in the mid-1940s, there was a significant improvement of teaching methods and the provision of materials for school economics in the United Kingdom. The 1960s witnessed general curriculum reforms in the United States of America. One outcome of such reforms was the publication of Economic Education in Schools, report of the National Task Force on Economic Education in 1961. The report reiterated the need for economics

education focusing primarily on the teaching of economics in secondary schools. The report of the task force also stressed the need to extend economics education even to the primary school.

Clow (cited in Hinshaw & Siegfried, 1991) asserted that economics can be studied successfully in secondary schools if taught by well-prepared and skillful teachers and urged its introduction into high schools in the US.

The rationale was to improve economic literacy needed for responsible citizenship among a wider community, by giving a strong emphasis on economics in the secondary schools curriculum. Since then economics is taught in some form in secondary schools of nations throughout the world. It has been taught as a stand-alone examination subject to prepare students for various schools certificate programmes (Nazeer, 2006). It has also been integrated with and taught through personal, social and career education programmes, as well as through other subjects via a process of subject permeation (Myatt & Waddell, 1990).

Economics teaching at this level of schooling appears to be important for the development of the economics understanding of students. Although economics courses are offered in universities, it is argued that the best opportunity for expanding the economic education of the youth of a nation occurs in secondary school (Caropreso & Haggerty, 2000; Walstad, 2001). A search for literature on economic education suggests that economics as a school subject together with how it is taught and learnt appear very much under-researched in many parts of the world (Jephcote, 2004; Walstad, 2001). Apparently, little attention has been given to the improvement of teaching and learning of economics in recent decades (Becker, 1997; Walstad, 2001).

Economics was part of the social sciences until it began to emerge as a separate discipline and since then economists had devoted their attention to the problems associated with the teaching of the subject and finding possible ways to improve teaching and learning of the subject (Johnson, McDonalds & Williams, 2001). There has been a growing concern in recent years about the economic literacy among graduates and current practices in teaching economics at different educational levels (Anderson, 1992; Becker, 2000). Becker (2000), contends that one of the few research studies available on high school teaching and learning of economics in the US, indicates that students tend to be ignorant of key ideas in economics, such as Gross National Product, inflation, profit and investment.

Surprising results were found in a study by Aske (2000) in the US, that American public high school seniors and college seniors showed widespread ignorance of the basic economics that are necessary for understanding economic events and changes in the national economy. When asked questions about current economic issues and personal finance, only 35% of high school seniors, and 51% of college seniors gave correct answers. Another study on teaching economics to undergraduates in Europe by Gartner (2001) raised worries about economics graduates' inability to communicate effectively in workplaces. Hansen (2001) also raised concerns about graduates' inability to articulate on economic issues, expressing doubts about what they could do when they entered the real world. The lack of economic literacy among such people could be that the field of economics has placed too little value on the importance of teaching and learning in recent decades (Becker, 1997).

Evidence in favour of the introduction of economics in secondary schools have proved to be justifiable over the years and economics as a school subject has also gained roots not in the tertiary institutions but in the senior high schools in Ghana and the world over. This is because it has been acknowledged that knowledge of economics and the ability to apply it to significant problems and issues are essential elements of responsible citizenship in a democratic society (Walstad, 2001). Economic literacy is useful since it enables students to better understand how the economy operates and what policies would be most useful in solving economic problems (Ferber, 1999). Having a relation with the philosophy of education of Ghana, economics literacy is expected to provide students with the requisite knowledge, occupational skills and attitudes for national development.

In achieving this broad goal, the Ministry of Education Science and Sports economics syllabus for Ghanaian senior high schools (2008 p.i) is designed to help students:

1. acquire basic economic concepts, principles and tools for economic analysis.
2. acquire greater understanding of the roles of consumers, businesses and governments in economic development.
3. develop the ability to analyze the structure, and functions of commercial, agricultural, industrial and financial institutions.
4. appreciate the economic development policies and strategies of the government and their inherent problems.

5. understand the relationship between the Ghanaian economy and external economies in respect of trade and integration.

The teaching and learning of economics in Ghanaian senior high schools has taken different forms over the years. Currently, the subject is taught as a stand-alone examination subject in relation with subjects and courses such as Geography, Accounting, Business Management, Home Economics, Visual Arts, and General Arts among others. Economics is studied at the Polytechnic level by students pursuing Diploma in Business Studies (DBS) and Higher National Diploma (HND). At the university level, business, social sciences and some science students (Agriculture and Mathematics students) study economics.

In recent times, students' understanding or lack of understanding of economic concepts has been the subject of most studies by economic education researchers (Myatt & Waddell, 1990; Dare, 1995; Repede & Burson, 2009). Apart from studies on misconceptions, a few studies have attempted to provide some topics which are perceived to be difficult for students at secondary school level. Research conducted by Walstad (2001), Repede and Burson (2009) showed that students find some microeconomics topics like "Market structures" and macroeconomic topics like "international trade" difficult to learn.

Over the years, the study of economics at the senior high schools has been fraught with a number of setbacks. Textbooks and other teaching and learning materials are not only inadequate but are of foreign source which makes it difficult for teachers and students to relate concepts, principles and examples to their local context. A study conducted by Dare (1995) on

“Towards a Better Understanding of School economics in Ghana: Some Suggestions for Action” found some problems in the teaching and learning of economics in Ghanaian secondary schools, the study revealed that teachers merely present but do not teach economic concepts and principles. He also found that a cluster of concepts in microeconomics like “Opportunity Cost”, Demand and Supply Analysis” and macroeconomic concepts like “National Income” among others pose the greatest difficulty in the teaching and learning of economics.

In recent times, senior high school students’ understanding of concepts and principles in economics ~~have~~ has not been encouraging. This is evident in past West African Examination Council (WAEC) Chief Examiners’ reports (2004-2007) which state that:

1. most candidates did not show clear understanding of economic concepts. They relied on guesses and did not appear to have been exposed to the real meaning of economic concepts.
2. a good number of candidates could not make the distinction between concepts like “Short-run” and “Long-run”, “Diminishing returns to scale” and “Increasing returns to scale”. This is a demonstration of weak knowledge of the subject.
3. candidates wrongly interpreted price mechanism as government intervention in the operation of the free market system.
4. some candidates were unable to explain properly the correct conditions that make a market imperfect.

Some studies in economic education have revealed that male and female students have different levels of perceived difficulties in learning certain topics in economics (Lumsden & Scott, 1987; Watts, 1987; Jensen & Owen, 2001). Becker, Greene and Rosen (1990) posit that conventional wisdom holds that males have a relative advantage in numerical skills while females excel in verbal skills. This view has given rise to an extensive literature on gender differences in learning economics. Mathematical presentation of economic ideas, concepts and theories has been part of economic education hence students with poor mathematical backgrounds find it difficult to understand some concepts and theories in economics (Focardi & Fabozzi, 2010). Some secondary school economics teachers in South Africa find some aspects of microeconomics and macroeconomics difficult to handle, hence they skip to teach other topics (Dorman, 2002). Guerrien (2002) notes that the teaching of microeconomics has been labelled as “autistic” because of the impossibility of discussing real-world economic questions with microeconomists. Economics as an academic discipline is widely regarded as an abstract field of study, more theoretical than practical, so that -beginning students in particular experience difficulty in learning its fundamental content (Caropreso and Haggerty, 2000).

A study by Yidana (2007) on “Students’ Perception on the Difficulty Level of Economics as a subject in Ghanaian secondary schools” which used first year university economics students as the sample revealed that some topics like ‘Consumer Behaviour’, ‘Market Structures’, ‘Elasticity of Demand’ etc. are some topics economics students perceived to be difficult. Yidana’s (2007) study looked at topics students perceived to be difficult to understand but did not take into consideration how easy or difficult secondary school

economics teachers handle topics in the secondary school economics syllabus. Also, his study used first year economics students in the university whereby the university environment could influence their perception of some topics they used to find difficult at the secondary school level.

Therefore, the aim of this study is to find out what economics topics students and teachers in senior high schools perceived to be difficult and find out whether the reasons both students and teachers account for their difficulties are similar or different. The study will also do a follow-up after the administration of instruments to have a focus group interview with selected students and individual interview with some teachers to really go in-depth of issues surrounding topics both students and teachers indicated as being difficult to understand and teach respectively. This will add a lot to existing scanty literature on teaching and learning of economics in secondary schools.

Statement of the Problem

Economic education provides an intellectual training, a preparation for citizenship, and a vocational training for a business career. Citizens must also understand and use basic economic concepts in order to perform adequately as producers, consumers and investors for the benefits of individuals and a nation as a whole (Nazeer, 2006; Yidana, 2007). This has made the study of economics in secondary schools very popular in most parts of the world and in Ghana as well. However, the performance of students in the West Africa Senior Secondary Certificate Examination (WASSCE) in economics has generally been poor. This is evident in the economics results released by the West Africa Examination Council (WAEC) over the last few years. Statistics

from the WAEC on economics students' results indicate that from the year 2003 to 2005, more than 40% of the total students who sat for the final examination failed. However, the percentage failure decreased (less than 30%) from 2006 to 2009 with females having more failures (more than 30%) from 2003 to 2006 out of the total students who sat for the final examination. This means that for a period of five consecutive years (2003 to 2007) less than 70% of total students who sat for the final examination passed with the highest percentage of passes in 2007.

Many factors could account for such poor performance. Some factors that have been suggested for students' poor performance in economics are students' attendance to economics lessons, learning styles, environmental factors, students' study time among others (Walstad, 2001). However, one factor which could also contribute to the low performance of economics students that has not been given much attention in economic education research is topics that students find difficult in learning especially under microeconomics and macroeconomics.

The WAEC Chief Examiners' reports (2003-2006) on students' performance in economics have consistently stated among other things that, students appear not to have understood basic concepts in economics. For example, ~~in the~~ 2004, Chief Examiners' report ~~clearly stated on on~~ the topic "Theory of the firm" clearly stated that "it was clear that from the answers of most candidates who attempted this question that they did not clearly understand the mechanics of the theory of the firm" (p. 6). Also, Chief Examiners have reported that some candidates confused one economic concept with another. For example, 'diminishing returns' with 'diminishing

marginal utility'. Some candidates also have difficulty with some topics like 'theory of production, 'market structures', 'national income', 'international trade' (Chief Examiners Report, 2005; 2006).

Economic educators have proposed hypotheses regarding possible gender-related difference in economic knowledge and learning. Male and female students have different levels of difficulty in learning certain topics in economics (Lumsden & Scott, 1987; Watts, 1987; Dynan & Rouse, 1997). Economics is full of mathematics and understanding certain concepts needs mathematical reasoning and thinking. Standard mainstream economic courses generally require reasonable good mathematical proficiency which often constitutes a significant stumbling block for many students (Edwards, 2004).

Some topics like 'elasticity of demand', 'consumer behaviour' and 'national income' among others were perceived to be difficult by Ghanaian students in a study by Yidana (2007), however, the study did not find out how economics teachers perceive topics in the senior high economics syllabus and also used first year university students as sample. Evidence from economic education literature suggests that economics teachers have some difficulties with some topics in economics (Dorman, 2002; Guerrien, 2002).

These reports raise questions about what economics topics do students find difficult and whether students' difficulty is as a result of teachers' inability to teach those topics effectively, or students for one reason or the other are unable to learn those topics or both? It will therefore, be worthwhile to investigate these issues and find answers to the questions raised.

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Purpose of the Study

The purpose of this study is to provide evidence on the difficulties of topics in the economics syllabus in the Central Region of Ghana. However, the specific objectives of the study are to:

1. identify topics that senior high school teachers and students perceive to be difficult to teach and learn respectively in the economics syllabus
2. investigate why senior high school teachers and students perceive some topics difficult to teach and learn respectively.
3. identify intervention measures that could be put in place to enhance effective teaching and learning of perceived difficult topics.
4. determine whether there exists any difference in the difficulty of topics in economics between male and female economics students in senior high schools.
5. determine whether there exists any difference in the difficulties of topics in economics between students who offer economics with mathematics and students who offer economics without mathematics.

Research Questions

The study was guided by the following research questions and hypotheses:

1. What topics do senior high school teachers and students perceive to be difficult to teach and learn respectively in the economics syllabus?
2. What reasons account for senior high school students' inability to understand some topics in economics?

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3. What reasons account for senior high school teachers' inability to teach some economics topics?
4. What measures could be put in place to enhance effective teaching and learning of difficult topics in economics?

Null Hypotheses

1. There is no significant difference between male and female economics students' perceived difficulties with topics in the economics syllabus.
2. There is no significant difference in difficulties with topics in the economics syllabus between students offering economics with mathematics and students offering economics without mathematics.

Significance of the Study

The study is significant for a number of reasons. The study provides additional information regarding economics topics students and teachers find difficult to learn and teach respectively. Guidance coordinators as well as teachers in schools could use such pieces of information to guide students on how to overcome difficulties with such topics by giving students reading assignments on such difficult topics before they are treated in class. Furthermore, the study provides information on why some of the topics in the economics syllabus are difficult, and for teachers to be aware of appropriate teaching strategies in teaching such difficult topics to senior high school students.

Finally, findings of the study will help stakeholders in economics education to be aware of topics that pose difficulties to both students and

teachers. This could inform policy decisions on the training of economics teachers.

Limitations

The study did not find out from the teachers if they have taught all topics in the economics syllabus. This could affect the results with regards to topics teachers have difficulties with. Some classes in some schools were yet to be taught some of the topics in the syllabus which could affect their responses to such topics.

Summary

~~This introductory chapter of the study has dealt with the background to the problem, statement of the problem, purpose of the study, research questions and hypotheses, significance of the study, delimitation of the study as well as limitation of the~~ **Organization of the Rest of the Study Chapters**

The thesis has four additional chapters, which have provided insight into the issues raised in this section and to provide answers to the research questions and the null hypotheses. Chapter two is devoted to a general review of the relevant literature on issues relating to the study. The chapter covered the conceptual framework of the study. There was another section on the empirical review under which studies related to the current study was reviewed. Chapter three covered the methodology which comprised the research design, population, sample and sampling technique, research instrument, validity and reliability of instrument, data collection procedure and data analysis. Chapter four of the study dealt with the presentation and

discussion of results or findings of the study. The final chapter which is chapter five covered the summary of the study, including key findings of the study, conclusions based on the findings and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Overview

In this chapter, related literature concerning the study was reviewed. The review, which involves both conceptual and empirical approaches, is intended to present a broad as well as specific overview about the literature related to this study.

The following are the headings under which both the conceptual and empirical reviews were made respectively:

- i. Overview of Nature of Economics and the Economics Syllabus
- ii. Concept of Perception
- iii. Areas of teaching and learning difficulties in economics;
- iv. Reasons accounting for teaching and learning difficulties in economics;

- v. Measures of improving teaching and learning of economics; and
- vi. Influence of gender and mathematics on the learning of economics.

Nature of Economics

The birth of economics dates back to the publishing of Adam Smith's book "An Inquiry into the Nature and Causes of the wealth of Nations" in 1776. It is therefore not surprising that he is considered the father of Economics. However, early writers used the term "Political Economy" in place of the term Economics. The Greek word "*polis*" which is translated to mean "state" forms the basis of this name. The term "Political Economy" means "management of the state" (Keynes as cited in Dow, 1999).

Historically, the term economics was coined around 1870 and made known by neoclassical economists' like Alfred Marshall as a substitute for the earlier term Political economy. Both economy and economics are derived from the Greek words "*oikos*" (*οἶκος*) – "house" and "*nomos*" (*νόμος*) - "rules" hence household management. From the period of the coinage of the term "Economics" up to date, many economists have come out with their own definitions or explanation of the term. According to Adam Smith, "economics is the science of wealth." John M. Keynes also defined economics as a method. Keynes (cited in Dow, 1999) attested that the theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions (Dow, 1999).

Another classical definition is Alfred Marshall's definition: "economics is a study of mankind in the ordinary business of life; it examines

that part of individual and social action which is most closely connected with the attainment and use of the material requisites of well being.” (cited in Hirshleifer, 1985: 53). Prof. Lionel Robbins also defined economics as a “science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.” (Stigler, 1984:301).

From the above definitions, economics can be simply defined as the management of relatively scarce resources to satisfy individuals’ insatiable wants. Economics like any other thing has its own language and terms. For example, when an economist talks about the consumption function, he is only trying to describe a specific mathematical situation, some phenomenon etc. By consumption, we mean the extra spending that will result as an increase in income or Marginal Propensity to Consume (MPC). There are three (3) main languages of economics namely: 1. Ordinary language, example English, French etc. 2. Mathematic 3. Economese. Thus, almost all the economics ideas can be expressed in any of these three (3) languages. The English language is the basic means of communicating economic ideas. The use of this method could be the easiest way of presenting economic ideas, and it could also be more appealing to students and teachers, with or without the background in economics (Chiang & Wainwright, 2005).

With regards to the language of mathematics, the use of mathematics in economics is an approach to economic analysis, in which the economist makes use of mathematical symbols in the statement of the problem and also draws upon known mathematical theorems to aid in reasoning (Chiang & Wainwright, 2005). Invariably, mathematics is said to have been used in economics when there is an attempt to present economic issues in

mathematical form for easy comprehension. Examples of branch of mathematics are: Algebra, Calculus (Differential and Integral), Probability, Matrixes, Statistics (Descriptive and Inferential) etc. These are terms used in economics whose meaning differs from the literal meanings of the word. The last language of economics is “Economese”. These are terms used in economics whose meaning differs from the literal meanings of the word. These terms are referred to as “economese”. An example is the consumption function or the marginal propensity to consume or MPC schedule.

Economics can be broadly divided into two main areas namely: Microeconomics and Macroeconomics. The term “macro” comes from the Greek word ‘*makros*’ which means large. We may define macroeconomics as the study of large aggregates of the economy, for example, National income, aggregate demand, aggregate supply, investment are all macro economic variables. One can also talk about popular issues like inflation, interest rate, exchange rate etc. which fall under macroeconomics. Macroeconomics deals with large-scale economic decisions. It focuses on countries or continents and large regions, and it generally has applications for government policy makers. Macroeconomics takes a "big picture" approach to the economy, studying economy wide phenomena and issues affecting the economy as a whole. Other major concepts in macroeconomics include unemployment, productivity, government budget deficits (or surpluses) and Gross Domestic Product (GDP). Microeconomics on the other hand, comes from the Greek word “*mikros*” which means “small”. It is defined as the study of small individual parts of the economy. This includes individual firms, households, price of a particular good etc. Microeconomic is a branch of economics which focuses on the

market attitude of the individual customers and organizations which enables the business to understand the market behaviour in micro perspective. Micro economics enables the business organizations to take decisions on the smaller and critical aspects; it also takes the factors affecting such decisions into consideration.

Mainstream economic theory relies upon a priori quantitative economic models, which employ a variety of concepts. Theory in economics typically proceeds with an assumption of *ceteris paribus*, which means holding constant explanatory variables other than the one under consideration. When creating theories, the objective is to find ones which are at least as simple in information requirements, more precise in predictions and more fruitful in generating additional research than prior theories.

In microeconomics, principal concepts include supply and demand, marginalism, rational choice theory, opportunity cost, budget constraints, utility, and the theory of the firm. Early macroeconomic models focused on modelling the relationships between aggregate variables, but as the relationships appeared to change over time, macroeconomists were pressured to base their models on micro-foundations. The aforementioned microeconomic concepts play a major part in macroeconomic models – for instance, in monetary theory, the quantity theory of money predicts that increases in the money supply increase inflation, and inflation is assumed to be influenced by rational expectations. Sometimes an economic hypothesis is only qualitative, not quantitative. Expositions of economic reasoning often use two-dimensional graphs to illustrate theoretical relationships. At a higher level of generality, Samuelson (1998) used mathematical methods to represent the

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theory, particularly as to maximizing behavioural relations of agents reaching equilibrium. He focused on examining the class of statements called operationally meaningful theorems in economics, which are theorems that can conceivably be refuted by empirical data.

Economics which is designated as a science subject deals with theories which are propounded after a rigorous scientific procedure which is termed as the scientific method. A theory according to Hardwick, Khan and Langmead (1996) is an attempt to develop a general explanation for some phenomenon. To them, a theory defines non-observable constructs that are inferred from observable facts and events and that are thought to have an effect on the phenomenon under study. This implies that, a theory describes the relationship among key variables for purposes of explaining a current state or predicting future occurrences. The following are examples of theories in economics according to Hardwick, et. al. (1996);

- 1. Price theory; the price theory basically deals with the theories of demand and supply.
- 2. Theory of consumer behaviour; this theory deals with how consumers allocate their money incomes among goods and services.
- 3. Theory of cost and revenue; this theory talks about all analyses which are carried out in the discussion of the cost and revenue issues of economic agents, particularly the firm.
- 4. Theory of production; In economics, an effort to explain the principles by which a business firm decides how much of each commodity that it sells (its “outputs” or “products”) it will produce,

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and how much of each kind of labour, raw materials, fixed capital good, etc. that it employs (“its inputs” or “factors of production”) it will use. The theory involves some of the most fundamental principles of economics. These include the relationship between the prices of commodities and the prices (or wages or rents) of the productive factors used to produce them and also the relationship between the prices of commodities and their supply.

•5. Purchasing Power Parity (PPP) theory; Equilibrium rate of exchange between two currencies determined by relative domestic purchasing power; exchange rates between two currencies in equilibrium when equivalent domestic purchasing power

•6. Keynesian Theory; Fundamental problem causing depression is insufficient demand for goods & services, so fiscal policy can revive the economy.

•7. Kinked Demand Curve Theory; Explains price rigidity; total revenue falls when prices rise / fall as rivals will match price decreases but not price increases.

Some of the above examples of theories in economics by Hardwick et al. (1996) resonate some major topics or sub topics in the senior high school economics syllabus in Ghana which forms part of the focus of this study. It will therefore be imperative to have a closer look at topics in the economics syllabus for Ghanaian senior high schools.

The Senior High School Economics Teaching Syllabus

In the words of Burston (as cited in Elewokor, 2007), a syllabus is a statement of the contents of a subject which students are proposed to study; it is also a statement of the order in which students are proposed to study those contents. The definition of Burston leaves out a lot of elements found in the syllabus by way of recognizing only the content. The definition therefore represents a parochial view of the syllabus. A more comprehensive definition of syllabus is given by Farrant (2005) which recognizes the syllabus as an outline specifying the rationale, aims and objectives, contents, learning activities and evaluation tools of a particular subject, packaged in the school curriculum.

The senior high economics teaching syllabus (2008) covers the concepts and general principles of economics at both micro and macro levels. The syllabus provides adequate knowledge for economic deliberations and analysis of economic issues and provides a good foundation for students who wish to further their studies in economics. The senior high school economics teaching syllabus (2008) has been divided into sections and each section falls under a particular academic year. The broad topics stipulated by year in the teaching syllabus are as follows:

Year 2

1. Fundamental Concepts in Economics
2. Factors of Production (Kinds of Resources or Inputs)

Year 3

3. The Theory of Production
4. Economic Systems (Economies)
5. Price Theory (Demand)

6. Price Theory (Supply)
7. Prices of Factors of Production
8. The Theory of Costs and Revenue
9. Distributive Trade
10. The Theory of Consumer Behaviour
11. The National Income Accounting and Determination

Year 4

12. Agriculture and Industry
13. Money and Financial Institutions
14. Public Finance
15. International Trade
16. Economic Co-operation
17. Economic Development Planning

The Economics syllabus for Senior High Schools presents issues that will help the economics teacher to enhance teaching and learning of the topics. The syllabus is not divided into microeconomics and macroeconomics; however, topics that come under microeconomics and macroeconomics are grouped together at a particular level. For example, topics like “demand and supply analysis”, “production theory”, “cost and revenue theory”, “market structures” are all microeconomics topics which are arranged in order for the third year for the senior high students. Some of the topics in the syllabus that come under macroeconomics are: “national income”, “money and “financial institutions”, “public finance”, “international trade” etc. and these are supposed to be taught in the final year. Some of the pertinent issues in the syllabus include teaching

methods, teaching-learning resources and procedures used in assessing students' learning outcomes.

With regards to instructional resources, it is stipulated in the syllabus for the effective execution of each topic in the syllabus the following resources: textbooks, visual aids such as charts and pictures, newspapers as well as resource persons must be used in the teaching of the subject.

The syllabus also stipulates the following methods to be used in the teaching of the subject. These include: project method, discussion method, question and answer, lecture, field trip and brainstorming. According to the Economics Teaching Syllabus (2008) "the use of these teaching methods and resources will help students to acquire the habit of analytical thinking, problem-solving attitudes and the capacity for applying their knowledge in dealing with economic issues in and out of school" (p.vi). The syllabus, also recommends some assessment procedures in assessing students' learning outcomes in Economics. They include the following: project work, quizzes, and class assignments. Others include data-response questions, essays and terminal tests.

The Concept of Perception

Different scholars had defined perception in various ways. According to Jennifer and Gareth (1996) perception is a process by which individuals select, organize and interpret the input from their sense (vision, hearing, touch, smell and taste) to give meaning and order to the world around them. Through perception, people try to make sense of their environment and objects, events and other people in it. Some scholars viewed perception to mean how we

interpret the information that we receive through the sense organs of the body (Jennifer & Gareth, 1996; Hayes, 1998). Gregory (1973) argued that perception was more than simply the decoding of information received by the visual system. Instead, it is a process of making inferences about the data-developing reasonable guesses on the basis of what is most probable or likely. Neisser (cited in Hayes, 1998) regarded perception as a skilled activity that takes place overtime, not a static, “snapshot”-like process. Geiger and Ogilby (2000) also see perception as the primary process by which we obtain knowledge about the world. According to Hayes (1998) perception is an idea, a belief or an image one has as a result of how one sees or understands something.

From the above, it is clear that almost all the definitions assume the fact that perception is a process. It is a process in that it is on-going. It occurs over a period of time. In analyzing the information received, one may have to do some guess-work or depend on some assumptions which can be accurate. This means that teachers’ and students’ perception of economics topics in the senior high economics syllabus will be right if their guess is correct. However, if their guess is wrong, naturally, their perception of the economics topics will be wrong as well.

Allport (as cited in Elewokor, 2007) described a study which showed how prejudice could affect perception. The experiments used a stereoscope which is a device for presenting a separate picture to each eye at the same time. They showed research participants mixed-race pairs of individuals, with one member of each pair shown to each eye. In general, people were most definite when they were picking out members of their own race, and more

unsure when they were categorizing people from other ethnic groups. But Afrikaaners, who were noted for their racial prejudices differentiated far more sharply between the races. They perceived subcategories or uncertainties in classifying people. Allport interpreted this as showing how the strongly racist views held by these people had affected their perception.

Perception formation according to Bierhoff (as cited in Ferreira & Santoso, 2006) is the strong influence exerted by information gained at earlier stages in building an individual's perception of something. The first information received not only impacts on the knowledge organization of the human mind, but also influences the processing of new information. Further to this, Bierhoff notes that where subsequent information is regarded as biased, preceding information benefits from greater validity, as the primacy effects fosters precise perception because the expectations based on the first information are comparatively valid, whereas subsequent contradictory evidence lacks validity. As a result of past beliefs, information received at later stages by a person is only interpreted in the context of an existing mindset. In other words, the assimilation of the later information will occur in the light of pre-established beliefs and expectations. Because the information received at an early stage shapes the impressions directly, this information plays a key role in influencing the information received at a later stage (Bierhoff, 1989) and how it is treated. Belief perseverance theory also maintains that individuals derive their expectations based on the first information received and that this affects the way they build impressions at later stages (Lord, Ross & Lepper, 1979; Bierhoff, 1989).

People are inclined to maintain the validity of their initial beliefs even where disconfirming information to those beliefs might be found. The consequence of this biased assimilation process is that individuals tend to regard the disconfirming information as irrelevant and unreliable (Lordet *al.*, 1979; Bierhoff, 1989). The belief perseverance theory is supported by studies that examine the tendency of people to assign greater attention towards information that supports their own preconceptions (Snyder and Swann, 1978; Snyder and Gangestad, 1981). Although opposing views argue that individuals place more attention on disconfirming information than the theory suggests (Brewer, as cited in Ferreira & Santoso, 2006).

Perception is also influenced by culture, learning, motivational support, predisposition to new situations and frequency of past confirmation of a congruent type (Ferreira & Santoso, 2006; Alexander, Mundrake & Brown, 2009). Of all the factors that influence the perception of an individual, learning is the most paramount (Ferreira & Santoso, 2006). In every new situation, learning takes place and for that reason it becomes crucial in determining correlation that exists between our past experiences. Learning difficulties can be said to exist in any situation in which a student fails to grasp a concept or idea as the result of one or more of three factors (Ferreira & Santoso, 2006). According to these studies, the first factor concerns the nature of the ideas/knowledge in relation to the concept to be learned. Indeed, according to Ballantine and Larres (2004), one of the most important single factors influencing learning is what the learner already knows.

Similarly, Ferreira and Santoso (2006), claim that individual prior conceptions derive from experience with the environment and their existing

ideas which are used to model new situations. The second factor concerns the demand and complexity of a learning task in terms of the information processing requirements compared with the student's information handling capacity. The third factor concerns communication problems arising from language use, especially in relation to technical terms, general terms with context-specific specialized meanings, and the complexity of the sentence structure and syntax used by the teacher, compared with the student's own language.

Areas of Teaching and Learning Difficulties in Economics

The section reviews research literature that is related to the teaching and learning difficulties in economics in general, as well as the limited amount of research that is available on teaching and learning difficulties of economics in senior high schools. A search of the literature located some studies at the undergraduate level and few at secondary school level. It appears that research on economic education at secondary schools has been neglected (Becker & Watts, 1995; Walstad, 2001).

However, the few studies on economic education at the secondary school level focus on general issues regarding the nature of economic literacy and ways of improving teaching and learning of economics at the secondary schools. Some of the issues to be considered include: difficult areas students and teachers find in economics; reasons that account for their difficulties; gender mathematics and the learning of economics.

As indicated earlier, economics was part of the social sciences until it began to emerge as a separate discipline and since then economists had

devoted their attention to the problems associated with the teaching of the subject and finding possible ways to improve teaching and learning of economics (Johnson, McDonald & Williams, 2001). There has been a growing concern in recent years about the economic literacy among graduates and current practices in teaching economics at different educational levels (Anderson, 1992; Becker, 2000). Walstad and Soper (1988), contends that one of the few research studies available on high school teaching and learning of economics in the US, indicates that students tend to be ignorant of key ideas in economics, such as Gross National Product, Inflation, Profit and Investment. Surprising results were found in a study by Aske (2000) in the US, that American public high school seniors and college seniors show widespread ignorance of the basic economics that are necessary for understanding economic events and changes in the national economy. When asked questions about current economic issues and personal finance, only 35% of high school seniors, and 51% of college seniors gave correct answers. Another study on teaching economics to undergraduates in Europe by Gartner (2001) raised worries about the economics graduates' inability to communicate effectively in workplaces.

Hansen (2001) also raised concerns about graduates' inability to articulate on economic issues, expressing doubts about what they could do when they entered the real world. The lack of economic literacy among such people might be because the field of economics has placed too little value on the importance of teaching and learning in recent decades (Becker, 1997).

A recent study conducted by Shahidul (2010) in North America indicated that principles and concepts in economics are huge and most

students find them difficult to digest. The chronology from introductory to intermediate to advanced to graduate level economics courses contain more or less same principles and concepts, however, in higher levels, the area of concentration becomes narrow. Shahidul's study was based on past experiences and informal discussions with colleague lecturers which make the findings of the study not very robust. According to Colander and Klamer (as cited in Shahidul, 2010) students are confused about many principles and concepts in economics in their undergraduate courses. The difficulty students have with some areas in economics is expressed succinctly by Armento (as cited in Shahidul, 2010):

Often, students view economics as a boring, difficult, and irrelevant subject; their learning of terms and definitions leaves them with the idea that the field is sterile and unrelated to their lives. They fail to see the relationships between their study of economic concepts such as supply and demand, productivity, deregulation, and comparative advantage; and current phenomena such as agricultural issues, changes in the telecommunications and transportation industries, and foreign trade-domestic protectionist argument (p. 613).

A study conducted in South Africa by Van Der Merwe (2006) on identifying constraints in first year economics teaching and learning, which used 220 first year economics students in attendance as sample in the university found that students find some basic concepts in economics difficult

to understand. This finding is supported by Caropreso and Haggerty (2000) as they contend that economics as an academic discipline is widely regarded as an abstract field of study, more theoretical than practical, so beginning students in particular experience difficulty in learning its fundamental content. Repede and Burson (2009) in their study “Improving Students’ Understanding of International trade” which used 28 macroeconomics principles students in a university attest that: “our experiences suggest that international trade is one of the more difficult topics for the average undergraduate student to grasp, particularly the ‘terms of trade’ methodology. This presents some special challenges for teachers” (p. 265). Dare (1995), conducted a study on the understanding of economics in Ghanaian secondary schools also indicated in his study that the cluster of concepts that tend to pose the greatest difficulty are microeconomics concepts which relate to the basic Economic Problem, Resource Allocation (e.g. Demand and Supply) and Income Distribution, added to these are macroeconomic concepts related to Economic Stability and Growth such as Inflation and National Income.

Furthermore, in a study on ideas for teaching economics derived from learning theory, Amento (2001), opines that students view economics as boring, difficult and irrelevant. Students also feel the learning of concepts and definitions such as ‘Productivity’, ‘Inflation’, ‘Theory of Comparative Advantage and Perfect and Imperfect market leaves them with the idea that the field is sterile and unrelated to their lives. A study by Maison (2004) cited in Yidana (2007) on the evaluation of the teaching and learning of economics in Ghana, found that economics students had difficulties in understanding about 51% of the topics in the economics syllabus. Some of the areas the students

cited as difficult were “Theory of Consumer Behaviour, Income Determination, Measurement of Price Elasticity and related subtopics.

Furthermore, the WAEC Chief Examiner’s report on students performance in the subject in 2006, noted that “the drawing of the ‘production possibility curve’ also presented difficulties to candidates” (p. 5). The report further indicated that students found difficulties in explaining some concepts such as “cash ratio”, “special deposits”, “Gross Domestic Deposit” and “inflation” in their examination. Furthermore, a study by Cohn, Cohn, Balch and Bradley (2001) also indicated that students find it hard to learn some concepts in economics that involves complicated graphs especially when students have little time to absorb them and do not have the opportunity to ask questions about them.

Resitters constituted over 40% of students who participated in Van Der Merwe study. This means that already there were more weak students among the students who responded to his multiple choice items which could not give true perception of the topics considering the students’ academic achievement. This gap will also be filled by my study by involving both students in low and high academic achieving schools to respond to items on the questionnaire.

Teachers of economics also have some challenges or difficulties in delivering some concepts to students. The norm is economics teachers inflict on the teaching of agreed-upon theories using simplified and fictitious examples (Dorman, 2002). Guerrien (2002) attests that:

The teaching of microeconomics has been labelled as “autistic” because of the impossibility of discussing real-world economic questions with microeconomists and

neoclassical theorists. The perception that the current orthodoxy in economic instruction is remote from reality may explain why economics is generally perceived by beginning students as overly theoretical and abstruse (p. 151).

This view is supported by Dare (1995) study in Ghana which found out that teachers have difficulty delivering lesson on some topics such as market structures, income determination, and international trade.

Research findings reported in the literature mostly in developed countries show that research in areas of students' difficulties with topics in economics has been limited to undergraduate students. Furthermore, the search for literature shows dearth of research on secondary school teachers' difficulties with economics topics. In view of this gap, this present study will focus on senior high economics students and their teachers to find out if any, topics students perceive to be difficult are the same or different from what teachers perceive as difficult and their reasons for the difficulties.

Reasons Accounting for Teaching and Learning Difficulties in Economics

A considerable and growing body of literature exists in respect of economics as an academic discipline. Much of it focuses on the controversial issue of the content of economics courses and teaching and learning approaches (Van Der Merwe, 2006). In his study, Van der Merwe (2006) identified the following as some of the factors that play a role in explaining students' difficulties with concepts in economics:

1. Mathematics and English proficiency

2. Student motivation
3. Demographic factors such as gender, age and race
4. Teaching and assessment techniques

With regards to mathematical ability and English proficiency, Van Der Merwe (2006), posits that standard economic courses require a good mathematical ability which often constitute a significant hindrance to most students. The two hypotheses of the present study relate to findings from Van Der Merwe study with regards to the influence of Mathematics ability and gender on the learning of economics. Several studies have established robust and positive relationships between economic performance and mathematics score, Van Walbeek (as cited in Van Der Merwe, 2006). According to Van Walbeek (as cited in Van Der Merwe, 2006), English proficiency also affects students learning of economics. English proficiency has a statistically significant impact on either multiple choice testing or essay questions in high school economics. Supported by this assertion is a study by Parker (2006) who posits that English verbal ability is a significant predictor of success in microeconomics. The study will explore reasons for students' difficulties with economics topics through some interviews with some selected students.

Motivation to study economics and consequent success in the subject are strongly related (Van Der Merwe, 2006). Demographic factors such as gender, age and race may be factors in determining successes in the learning of economics (Van Der Merwe, 2006). Some studies suggest that female students perform significantly worse than their male counterparts in multiple choice testing (Walstad & Robson, 1997; Van Der Merwe, 2006); however, other studies indicate that female students perform better on economic essay

questions than male students (Van Walbeek as cited in Van Der Merwe, 2006). Some studies have found out that neither age nor college experience is significant determinants in the learning of economics (Watts & Lynch, 1989; Edwards, 2000; Parker, 2006). A study by Hoag and Benedict (2002) “Who’s afraid of their economics classes? Why are students apprehensive about introductory economics courses? An empirical investigation” in the USA indicated that some students found it difficult learning some concepts in economics because of the following reasons:

1. Economics is somehow abstract
2. The course has a reputation of being hard
3. Weak mathematical ability and this effect appears too large for females than males
4. Some students come to economics class with negative attitude toward the subject and this causes students to do poorly because of high stress.

The above reasons given by students in Hoag and Benedict study will be adopted in my study through being part of items on questionnaire to find out whether senior high school economics students in Ghana share same reasons with students in the US.

The teaching of economics should aim at helping students to think for themselves about economic problems and issues and to develop interest and skills so that they would be able to use economic analysis after school (Nazeer, 2006). However, some studies on teaching and learning of economics in secondary schools have shown that teachers use lecture method, note-dictating which affect students understanding of some basic concepts in the subject (Dare, 1995; Becker & Watts, 2001). A study in the Maldives by

Nazeer (2006), indicates that many former students of the Maldives College of Education identified that their lack of knowledge of economic concepts was largely due to teaching which emphasizes rote memorization and sitting passively in classrooms. This consequently let them forget what they have studied for examinations. The study further indicated that there was a general pattern of “Chalk and Talk” or one- way transmission teaching as the teaching methods used by economics teachers in secondary schools affecting students understanding of concepts. In a study conducted by Yidana (2007) in Ghana, students gave reasons with regard to their difficulties with some topics in economics as some of topics involved a lot of mathematical calculations, complex diagrams and demanding a lot of imagination and unrealistic assumptions.

A study in Ghana on understanding of school economics by Dare (1995), found out that inadequate library facilities, lack of vital supplementary textbooks and journals and lack of provision for tutorials and seminars were some of the reasons that accounted for students’ learning problems in economics. He also found that, teachers used lecturing to cover more grounds to meet the demands of external examination. Other studies have also shown that most economics instructors use the lecture method approximately 80% of their class time (Siegfried, Saunders, Sonar and Zhang, 1996; Benzing and Christ, 1997). The same study by Dare (1995), also revealed that teachers tend to teach the way they were taught. The implication is that economics teaching may continue to be approached through lecturing and note-dictation since these were invariably the methods used in teaching the teachers.

Also, the secondary school environment does not favour the organization of tutorials, seminars because the time-table is over loaded and teachers are over burden, hence "...teachers merely present economic concepts and principles; but such concepts and principles are not taught" (Dare, 1995, p. 33). In a study by Dorman (2002), economics teachers indicated that the theoretical and abstract nature of some issues in some topics and poor entry characteristics such as poor mathematical background are some of the reasons that make teaching of some concepts difficult to deal with.

In Ghana, Yidana (2007) reported that students have difficulties with some economics topics. His sample consisted of first year university students in their first semester. These students' perception about some economics topics when they were in senior high schools could have changed as a result of their presence in the university. Therefore, using senior high school students who are in their final year might be significant for the study. Furthermore, most of the studies reported in the literature including those in Ghana did not take into consideration teachers of those students. This makes it imperative to involve in my study senior high school economics teachers to find out what topics they also find difficult to deliver lessons on.

Measures of Improving Teaching and Learning of Economics

A changing world requires a changing style of education. Young people who are being prepared for entry into adult responsibilities need to be equipped with knowledge, skills and positive attitudes to be successful in this society. Thus, economics teachers must continuously assess the economics' curriculum in terms of the current status of the academic discipline in order to

provide students with the latest knowledge and skills necessary for taking part in economic activities (Becker & Watts, 2001). The primary obligation of the schools, colleges, universities and other educational institutions is believed to be to help the students to “develop the capacity to think clearly, objectively, and with a reasonable degree of sophistication about economic problems” (Lee, 1975, p. 39). The lack of economic literacy and inability to reason out clearly and objectively about economic issues leads to limits in taking part as an effective citizen in economic activities, as indicated by Banaszak (1987).

However, there has been a world-wide movement to improve economics teaching through the use of teaching methods designed to have students actively involved in the learning process (Becker & Watts, 2001). Despite some indications of increased emphasis and interest in teaching over this period, lectures are still the most frequently used teaching strategy by the US economists. A similar survey by Benzing and Christ (1997), and Siegfried et al. (1996) consistently found that academic economists lectured for approximately 80% of their class time. The remainder was filled with recitation, showing overheads, videos, movies, or questions and answers (Caropreso & Haggerty, 2000). It is not surprising to note the immense usage of lectures as a mode of instruction as it is a rapid way of transmitting factual information and it can be delivered in a manner that motivates and entertains students, for example, through the use of cartoons, videos, newspaper clips, and power point animations (Johnston et al., 2001). A lecture can also provide interactive learning by engaging students through direct questioning or short collaborative exercises within the lecture (Johnston et al., 2001). In addition, Good and Brophy (2003) believe when lectures are presented in interesting

and enthusiastic ways then they can stimulate interest and raise questions that students will want to follow up.

However, Becker's and Watts's (1998; 2001) surveys indicate that these strategies are not often used in teaching economics and that for the vast majority of time lectures are spent using chalk and talk. More recently, this may be whiteboard and talk, and even Powerpoint and talk. Many students expect to be engaged in the learning process and appear unwilling to sit passively through lectures. A study by Becker and Watts (1998) recommends that teachers should use a varied approach periodically involving students actively in the learning process. They posited that some students are natural-born listeners, some are talkers and discussion leaders, and some seem to learn best using group activities that feature "hands-on" demonstration of economic concepts and relations.

In teaching and learning of economics, the teacher has to gain students' attention and ensure their active participation in the learning process. Discussion, role-playing and case study methods of teaching economics are generally considered as those that ensure active participation of the learners. Visits and field studies are equally important in the teaching and learning of economics (Becker & Watts, 2001; Benzing & Christ, 1997). In addition to this view, Siegfried and Fels (1979) advocated:

The importance of using alternative methods in teaching economics because "different students learn economics in different ways. The best teaching strategy provides alternative learning methods" (p. 35), methods that can keep students actively involved, with both practice and

feedback. Such alternative approaches recommended by Becker and Watts (1995) include games and simulations, experimental economics and classroom activities, writing assignments, economics in literature and drama, the popular and business press and case studies (p. 699).

A number of studies on teaching methods used by economics teachers shared some similarities with respect to the lecture method where lectures are combined with showing overheads, videos, cartoons and power points (Siegfried et al, 1996; Benzing & Christ, 1997; Johnston et al, 2001; Good & Brophy, 2003). In contrast to this, Becker and Watt (1998; 2001) believed that lectures are used by most teachers through the use of chalk and talk. It will therefore be interesting to explore in my study which practical methods do senior high economics teachers use to teach in Ghana.

Some studies have also indicated the use of Problem-Based Learning as a measure of improving the teaching and learning of economics. In a study conducted by Maxwell, Mergendoller and Bellisimo (2005) on “Problem-Based Learning and High School Macroeconomics: A Comparative Study of Instructional Methods” in California found out that Problem-Based Learning (PBL) is gaining support as a technique to increase subject-matter knowledge of teachers of economics and increase effective learning of economic concepts among students. A low level of knowledge of economics may make PBL more difficult to implement. In PBL, the teachers’ role is a coach; coaches probe by suggesting further study or inquiry. They guide students toward researching appropriate topics and sources, developing appropriate lines of inquiry and producing an economic solution to the problem posed (Maxwell, Mergendoller

& Bellisimo, 2005). Maxwell, Mergendoller and Bellisimo study considered only topics under macroeconomics hence his assertion of PBL resulting in increasing effective learning and increase in subject-matter of teachers cannot wholly be acceptable since topics under microeconomics were not used in the study.

This study will include topics under microeconomics and macroeconomics within the purview of the senior high school curriculum. A recent study by Lopez (2009) revealed that while there are several methods of active learning/teaching, for example; classroom discussion, role-playing, data-based exercises, in-class debates, in-class experiments, service-learning promotes greater level of learning than other active-learning techniques.

According to Ziegert (2002), service-learning takes students out of the classroom and offers them real-world, hands-on experience in applying and understanding economics. McGoldrick (2002) discusses several service-learning models that can be integrated into a course. The models include: 1) community service, 2) action research, 3) community problem solving seminars and 4) students-based instruction, which was used for the project. The community service model allows students to test economic theories against the actual population. The action research model requires that students work with an organization or community to design and implement a project with the goal of assisting the organization or community. In the community problem solving seminar model, the course is designed as a seminar in which students identify a problem within the community and work on developing a solution to the problem.

Last but not the least is the student- based instruction model where students teach the course material to a targeted audience to strengthen their understanding. Students in an economics class can teach a topic like Value Added Tax (VAT) under Taxation to a section of the working population (eg., Nurses) to explain to them the meaning, importance and how VAT works in an economy. This process will strengthen their understanding of Taxation in economics. Proponents of service-based learning claim there are several benefits to implement service-learning into economics (Lopez, 2009). Unlike the “talk and chalk” method, service –learning enhances economic literacy and the ability to use economics in everyday life. Students who can connect their knowledge of economics theory with real-world issues are better motivated to learn the material because they see the potential benefit of such knowledge; service-learning may actually increase diversity in economics classrooms (Ziegert, 2002). A study in Maldives by Nazeer (2006) found out both teachers and students of economics perceived cooperative learning to be more effective method of teaching. Also, the study revealed that students liked working in groups and appreciated getting help from other students. The results of the study showed that students’ interactions and involvement in classroom activities, as well as interest and motivation to learn economics, increased during the implementation of cooperative learning model.

Bergstrom (2009) outlined some practical ways of teaching some perceived difficult topics in economics using classroom experiments. He conducted a restaurant experiment to teach some perceived difficult microeconomics concepts. In the experiments, students were given an opportunity to open a restaurant. To open a restaurant, one must pay a Fixed

Cost (FC) of \$20. Restaurant operators must pay the fixed cost irrespective of the number of customers they attract. Each restaurant has only four stools and can serve up to four customers. The Variable Cost (VC) of preparing and serving a meal was \$ 5 per customer. The restaurant experiments of Bergstrom (2009) went on whereby concepts such “Demand and Supply”, Cost and Revenue concepts, “Short and Long-run Equilibrium in the industry” were easily understood by students involved. Cohn, Cohn, Balch and Bradley (2001) found out that there was statistically insignificant association between a measure of performance and student belief that graphs were helpful in learning of economics, however they admonished student understand economics better when there is a better combination of verbal and graphical representation of economic concepts of the instructor.

Modern resources in the teaching and learning of economics are the use of powerful medium, the motion picture to establish the context for teaching basic concepts in economics. The plots and subplots in many films can be used to illustrate problems and issues that are amenable to economic analysis (Leet & Houser, 2003). “In addition to a course that is built around films, films (or parts of films) could be used in a number of ways to enhance economics instruction in much the same way that Tinari and Khandke (2000) describe using literature and music, respectively” (Leet & Houser, 2003, p.327). Leet and Houser, (2003) contend that many instructors use particular sequences from films to illustrate economic concepts in ways that make these concepts more real to their students. Examples of films that illustrate some economic concepts and enhance learning of the concepts cited by Leet and Houser (2003) are the following: The character of George Bai-ley in “It’s a

Wonderful Life” explains why depositors cannot withdraw all of their money from the building and loan during a run on the bank, which illustrates how the fractional reserve system allows banks to create money. This bothers on topics like “Money and Banking”, “Monetary Policy”. “ The man in the White Suite” also enhances the learning of “Market Structure”, “Oligopoly” and “Market Power” (Leet & Houser, 2003).

Furthermore, a number of authors discuss the use of individual films as case studies in university business and finance courses. Examples of how to use individual films to enhance instruction in finance courses can be found in articles on Wall Street (Dyl 1991; Belden 1992), Other People's Money (Chan and Weber 1995). A similar approach could be taken in economics courses. Viewing the film together in class enhances class discussion and student understanding in ways that may be superior to the standard lecture-discussion and develop the skill of seeing the film analytically (Leet & Houser, 2003).

The advocates of using films or parts of films to enhance the learning some economic concepts thought about their context in the use of films in teaching, however, in Ghana a lot of conditions could prevent the use of films in teaching. For examples, some of the films named above could not be found on our local market for purchase and if they were, purchasing them will become a problem.

An investigative study into the preferred learning styles of Accounting, Management and General Business students by Novin, Arjomaud and Jourdan (2003) suggested appropriate teaching strategies to meet students’ preferred learning styles. The study found out the most Accounting students prefer converger learning style. These students are active learners who prefer

discovery-type of learning. Instructional methods that suit Convergers include, above all, interactive, not passive style. Computer-assisted instruction is a possibility, problem sets or workbooks can be provided for students to explore Litsinger and Osif (cited in Novin, Arjomaud & Jourdan, 2003). The study also revealed that the General Business students (such as economics students) prefer an assimilator learning style. Assimilators want an accurate, organized delivery of information, and they tend to respect the knowledge of the system expert. Instructional methods that suit Assimilators include lecture method (or video and audio presentation) followed by a demonstration of a subject corresponding to a prepared tutorial and for which answers should be provided.

Assimilators are perhaps less “instructor intensive” than some other learning styles. They will carefully follow prepared exercises, provided a resource person is clearly available and able to answer questions. Divergers style of learning was the least preferred style of learning by the students, hence most General Business students prefer assimilator and converger styles of learning. The assimilator learners’ arguments concur with some economic educators studies on methods of teaching economics effectively (Benzing & Chris, 1997; Maxwell, Mergendoller & Bellisimo, 2005; Lopez, 2009).

No instructional approach can be optimal for everyone since students differ widely in their preferred style of learning (Claxton & Murrell, 1987). This means that economics teachers have to vary their method of teaching to enhance effective learning of economics. In a study in Ghana by Dare (1995), he posits that to increase students’ understanding of economic concepts, students must not simply be motivated, but the teacher should ensure that the

students are intrinsically motivated. The economics teacher must be versatile and flexible and learn how effectively to attend to all learning styles of students. Following the different learning styles by the authors discussed so far, Goorha and Mohan (2010) suggest that business schools students learn by reflecting on a concept and making observations, abstractly conceptualizing the concept by drawing on these reflections and by applying the concept through experimentation, hence the teacher should facilitate conceptualization with active experimentation medium such as case studies, a collaborative project or simulation exercise.

Influence of Gender on the Learning of Economics

Differences in the understanding of economics by males and females have long been studied in economic education. According to Siegfried cited in Walstad and Robson (1997) research generally shows that test scores in economics are higher for males than females at the high school and college levels. Siegfried (1979) studied on the relation of gender and economics understanding which focused on the level of economics understanding (the students' stock of knowledge) and on learning of economics (the flow of knowledge). He argues that studies which use the stock of knowledge as the dependent variable report a higher level of understanding for males. He explained that the difference appears some time after the early elementary years and prior to college. In general, there does not appear to be a difference between male and female learning of economics secondary grades and college years (Siegfried, 1979).

Economic educators have proposed several hypotheses regarding possible gender-related difference in economic knowledge and learning. Some

of these studies include the possibility that economics is viewed by students, parents, and teachers as a discipline more appropriated for boys to study than for girls; the existence of male-female differences in quantitative ability at the high school level; and possible sex bias in teachers' attitudes and/or instructional materials in economics (Jackstadt & Grootaert, 1980). Findings from the study of Jackstadt and Grootaert found that students who did not gender-stereotype economics perform better on Test of Economic Understanding (TEU) and learn more in class. In addition, students who had no preference regarding the sex of their economics teacher do better on the test and learn more. When gender was included as a dummy variable in their regression model, its coefficient was not significantly different from zero in any of the regressions. The absence of gender differences in TEU scores, however, stood in contrast to their finding that gender-related factors affected students' levels of economic understanding and their learning of economics.

Male and female students have different levels of difficulty in learning certain topics in economics (Lumsden & Scott, 1987; Watts, 1987). A student's inability to perform creditably in a test of economic knowledge reflects certain learning difficulties associated with certain topics. Becker, Greene and Rosen (1990) posit that conventional wisdom holds that males have a relative advantage in numerical skills while females excel in verbal skills. This view has given rise to an extensive literature on gender differences in learning economics. In a study by Watts (1987), which used 50 first year university students in the US, findings revealed that males have higher levels of economic understanding as early as grade five. Males and females tend to learn the same amount during high school and college, so the gap that

materialized before high school never closes during the schooling experience.

Although studies show a statistically significant gap in male and female learning of high school economics, the difference is typically small in magnitude-on the order of a couple of multiple choice questions when background variables are controlled (Becker, Greene & Rosen, 1990). An exception to the findings of Becker et al. (1990) is a report by Heath (1989) that male students outperformed women by 10 Test of Economic Literacy (TEL) points in economics courses after controlling for the fact that women do not elect to take economics. According to Siegfried (1979) two-thirds of the studies related to the level of understanding with gender found that males performed statistically significantly better than females. Although there is a substantial division of opinion, in general the empirical research seems to suggest that by the time people reach college age, men are significantly ahead of women in understanding economics (Siegfried, 1979).

Most of the studies above (Watts, 1987; Heath, 1989; Becker, Greene & Rosen, 1990) on differences in learning between male and female economics students made students to respond to multiple item questions which gave them extent of learning among the students, however, my study will use the topics in the syllabus for students to indicate how easy or difficult they perceive the topics as another approach of finding out students difficulties with the learning of topics (Johnstone published in Ampiah, 2001).

Several reasons have been offered to explain the gender differences on tests of economic achievement. Lower test scores in economics for females have been attributed to social and cultural influences that create sex-role stereotypes that reduce female interest and achievement in a traditionally

male-dominated subject such as economics, Jackstadt and Grootaert (cited in Walstad & Robson, 1997). Siegfried (1979) explained that, the standard hypothesis underlying most empirical tests of the effects of gender on economic learning or understanding is that female students have grown up in a cultural environment in which girls are not supposed to like business and thus have a disadvantage in business or economics. A second explanation considers the possibility that cognitive differences between males and females, such as mathematical, spatial, or verbal skills, may result in performance differences on economics tests (Dynan & Rouse, 1997; Walstad & Robson, 1997). A third reason focuses on instructional differences that may limit the economic understanding of females. Among these are “chilly” classroom climates for women, biased educational materials, and poor teacher role models. In a study on Pedagogy, gender and interest in Economics, Jensen and Owen (2001), reviewed some literature on reasons for the gender differences in economics.

According to Ferber (cited in Jensen & Owen, 2001) female students have different career aspirations and are therefore less interested in economics, but blame the lack of interest in mainstream economics curriculum that excludes topics and methods that appeal to females. Ferber further supported the fact that for the lack of female role models in the classrooms adversely affects female students’ choice to study economics. Consequently, Dynan and Rouse (1997) studied all students in introductory economics students in Harvard University on the underrepresentation of women in economics posit that inferior mathematics preparation of female students in high schools result in poorer relative understanding of economics. Teachers of economics are largely responsible for the trend in difference in male and female

understanding of economics as they either create a classroom environment that is unfriendly to women or by adopting pedagogy and using evaluative instruments that favour male style of learning (Becker, 2000).

Influence of Mathematics on the Learning of Economics

One of the goals of secondary education is to prepare students for the intricacies of every day decision-making. Students will face many situations which are complex with limited solutions. Through classroom experiences, critical thinking is built to tackle such situations. Mathematics is an important element of such development because solving mathematical problems helps students with transitional ability, the ability to take what they know and apply that to what they do not know (Hoag & Benedict, 2010).

According to Dow (1999), mathematics first took on a significant role in economics in the last century in the build-up to what is commonly referred to as the Marginalist revolution. This was a period in which classical concerns with production, growth, and the distribution of the fruits of growth among social classes, were replaced by concern with market exchange. The focus thus shifted from the level of the economy and social classes to the level of the individual. There was a concern around the same time that economics should be seen as a discipline at par with the physical sciences (Drakopoulos, 1991). At the same time other economists saw mathematics as the vehicle for achieving this goal (Dow, 1999). Further, just as the physical sciences were built up in axiomatic fashion on the basis of units of energy, etc, economics

was being built up axiomatically on the basis of units of utility. Hence, Walras (as cited in Dow, 1999) asserted “it is only with the aid of mathematics that we can understand what is meant by the condition of maximum utility” (p.145). Dow (1999) went further to posit that the term ‘marginal revolution’ referred to the mathematical result of the marginal conditions for market equilibrium, as derived by calculus.

Those who made strong claim for the mathematical methods in economics appeared to believe that this method could itself yield valid conclusions in economics. It is an undeniable fact that, the use of mathematics makes economic analysis easier than it is supposed to be. Mathematical economists Chiang and Wainwright (2005, p. 3) outlined these advantages of using mathematics in economic analysis:

1. The “language” used is more concise and precise.
2. There exists a wealth of mathematical theorems at our service.
3. In forcing us to state explicitly all our assumptions as a prerequisite to the use of the mathematical theorems, it keeps us from the pitfall of an unintentional adoption of unwanted implicit assumptions.
4. It allows us to treat the general n -variable case

Mathematics education researchers find that college preparatory mathematics leads to higher test scores in high school students’ subsequent academic careers (Ganoran & Hannigan, 2000). The conclusion is that mathematics maturity and understanding help students become overall learners (Ganoran & Hannigan, 2000; Focardi & Fabozzi, 2010). The use of mathematics in economics is an approach to economic analysis, in which the economist makes use of mathematical symbols in the statement of the problem

and also draws upon known mathematical theorems to aid in reasoning (Chiang & Wainwright, 2005).

The relationship between mathematics and subsequent performance in economics courses has also been investigated by economics educators in recent years; however, their results have been inconsistent across studies to enable curriculum developers to have directions with regards to the type of mathematics and sequence of mathematics and economics courses (Hoag & Benedict, 2010). A study by Siegfried et al. (1996) found out that students taking principles of economics have had a college level calculus course before taking economics. He concludes “success in economics can be achieved without calculus, but that calculus is widely seen as a variable tool for many economics students” (p. 23). However, Milkman, McCoy, Brasfield, and Mitchell (1995) attest that college algebra course does not improve performance at statistically significant level. In similar study by Milkman et al. (1995), student were given a pre-test (Test of Understanding College Economics, TUCE) and a post test (TUCE). The study examined both the absolute level of understanding and the change in understanding between tests, college algebra was found to be statistically significant factor in understanding microeconomics while calculus nor algebra was statistically significant on the difference between the pre-test and post-test.

Anderson, Benjamin, and Fuss (1994) examined the predictors of academic success in principles of economics in a class that was essentially a year long principles class. The dependent variable is the final grade. The independent variables include how the student performed in various high school classes. The high school grade index was statistically significant and

positive. The subject areas were represented by binary variables indicating if the student took the class in their final year of high school and a second variable representing their grade in that class. The authors control for three different math classes: algebra, functions, and calculus. These math variables had a negative coefficient, but were not statistically significant. The math grade had a positive coefficient, but was not statistically significant. However, joint tests on the dummy variable and grade for each math class indicated that neither algebra nor functions had an impact, but that calculus did.

The findings of Milkman et al. (1995) conflicts with Chiang and Wainwright (2005) that knowledge in mathematics improve learning of economics which failed to indicate the type of mathematics one needs to enhance the learning of economics. This present study will test the hypothesis that there is no difference in difficulties with topics in economics between students offering economics with elective mathematics (pure mathematics) and students offering economics without elective mathematics but offers core mathematics.

On the contrary, from other researchers, data from two sections of principles of economics at the University of South Carolina during the spring semester was used by Cohn, Cohn, Hult, Balch, and Bradley (1998) to test conflicting results in the literature with regards to effect of mathematics background on learning. Two measures of mathematics background and an expanded list of explanatory variables were used. After controlling for SAT scores GPA and other variables, they found no statistical significance of mathematics background on learning in principles of economics.

Ballard and Johnson (2004) report on their examination of the relationship between mathematics skills and learning principles of microeconomics. The relationship was generated by an ordinary least squares regression where the dependent variables included both measures of mathematics skills and other control variables. The measures of mathematics skills included whether the student took a remedial mathematics course, or the student took calculus, and their score on a 10 question mathematics quiz. The dependent variable was percentage of correct answers on three multiple choice tests given during the semester. Whether the student had taken calculus and whether the student had taken a remedial math course were statistically significant, with the remedial course having a negative sign. The score on the math quiz was also statistically significant. If the four measures of quantitative ability are combined, a substantial effect is generated. They posit that better algebra skills may be more important than more calculus concepts for success in economics. Finally, they conclude that quantitative skills are important for success in economics.

Students' grades they earn in economics are affected in a statistically significant and positive way by taking a mathematics class in senior high school (Reid, 1993). A study by Kassens Uhl and Fleming (2007) on predicting performance in principles of economics buttresses the point on mathematical ability and learning of economics as they indicated that the results of an ordered probit indicated that students with better mathematical skills performed better in their economics classes.

A recent study by Hoag and Benedict (2010) on "what influence does mathematics preparation and performance have on performance in first

economics classes?” which used a unique control for mathematics prior to the college experience. Their study examined whether mathematics preparation and specific mathematics skills help students to be successful in an economics course. The results of the study revealed:

1. Ceteris paribus, those individuals with background that qualified them to take higher levels of mathematics courses were more likely to receive A's and B's in their economics course, compared to those students who had relatively less math preparation from high school and subsequently placed no higher than in elementary or intermediate algebra;
2. The positive effect on grades grew as the placement level grew and those whose highest placement was in the calculus courses that included analytic geometry and trigonometry had the highest average probabilities of receiving an A or B grade in their first economics courses;
3. The effect of the ACT math subscores indicated that students who received higher scores in elementary algebra, college algebra, or trigonometry and geometry have a higher probability of receiving A and B grades in their economics courses;
4. The higher the level of ability in mathematics, e.g., trigonometry and geometry, the more likely the student will perform well in economics;
5. Taking college level calculus or higher level mathematics as an economically and statistically significant influence on one's learning of economics.

The study further indicated that being exposed to more mathematics in high school is an important issue. Hoag and Benedict (2010) admonished: “Algebra skills matter where one focuses on getting the answer. Calculus prepares the student too, but the student must see the function, how things are related, and the student will be exposed to marginal analysis (e.g. total revenue and marginal revenue concepts)” (p. 37). This implies that students’ preparation in math is the abstract reasoning associated with geometry, trigonometry (Focardi & Fabozzi, 2010; Hoag & Benedict, 2010).

These studies on the influence of mathematics on the learning of economics suggest that mathematics may play a vital role in the learning of high school economics. It is however, not clear whether the influence comes from taking of the mathematics course, the performance in the mathematics course or the mathematical skills that one brings into the learning of economics.

Summary

The review revealed that learning is the most paramount of all the factors that influence the perception of an individual (Ferreira & Santoso, 2006). Learning difficulties can be said to exist in any situation in which a student fails to grasp a concept or idea as a result of three factors (nature of the ideas/knowledge in relation to the concept to be learned; Demand and complexity of a learning task; communication problems).

The literature shows that there had been studies on the learning and teaching of topics in economics. These studies (Dare, 1995; Dorman, 2002; Van Der Merwe, 2006; Repede & Burson, 2009) show that students have

some difficulties with some topics in economics. However, most of these studies were done in developed countries (Caropreso & Haggerty, 2000; Repede & Burson, 2009). Furthermore, the search for literature revealed that much had not been studied on teachers' difficulties with economics topics in secondary schools. In view of the gap, this present study targets students and teachers in senior high schools in Ghana to find out what topics they find difficult to learn and teach respectively.

Similar reasons were given by different authors (Van Der Merwe, 2006; Hoag & Benedict, 2002; Yidana, 2007) accounting for students' difficulties with the learning of some economics topics. Most of the reasons they gave will be adopted in this study to really find out whether senior high school economics students in Ghana have similar reasons that account for their difficulties with economics topics with students in the university and the other countries.

The studies of Siegfried et al. (1996); Johnstone et al. (2001), Good and Brophy (2003) in the literature suggest similar teaching methods that would improve the teaching and learning of perceived difficulties with topics. However, some studies (Maxwell, Mergendoller & Bellisimo, 2005; Zieget, 2002; Leet & Houser, 2003) suggest other measures such as Problem-Based learning, service-learning, the use of motion pictures to facilitate learning etc. that will improve the teaching and learning of topics in economics. Most of these measures will be explored in this present study by adopting some of them for students and teachers.

Lastly, almost all the studies reported in the literature used quantitative methods to arrive at their findings, hence, reasons that accounted for students'

and teachers' difficulties are masked. In view of this gap, this present study will employ both quantitative and qualitative methods (mixed methods) to have in-depth understanding of issues that surround students and teachers difficulties with economics topics and why they face these difficulties in senior high schools in Ghana.

CHAPTER THREE

METHODOLOGY

In this chapter, the methodology used for the study is described. This includes the research design, population, sample and sampling procedure, the instrument used in the data collection, pilot testing of instruments, administration of instruments, and data analysis.

Research Design

This study was in two parts, and followed a mixed method design using both quantitative and qualitative techniques (Creswell, 2008; Cohen, Manion & Morrison, 2008). A comparative quantitative design was used to find answers to four research questions and to test two hypotheses. To find out if any, differences existed among male and female economics students on difficulties with topics in the economics syllabus. The second hypothesis was to find out if any, differences in difficulties with topics in the economics

syllabus between students offering economics with mathematics and students offering economics without mathematics.

A survey method was used with economics students randomly selected from six schools stratified into high performing schools and low performing schools in Central Region. All economics tutors in the sampled schools participated in the survey. All the sampled students and teachers completed a set of questionnaire each; the individual students and teachers scores were used as the unit of analysis.

In the second part of the study, interviews were conducted to investigate, qualitatively questions that emerged in the first part of the study. Four economics teachers were purposively selected from the original samples for interviews. The interviews were done as a follow up to have in-depth knowledge on the difficulties teachers face with the economics topics. Furthermore, two focus group interviews were conducted with students purposively selected from the original sample for more intense study. Instead of defending the patterns that emerged from the survey based on judgments derived from a wide sample without empirical grounding, the qualitative design helped to gain further understandings into factors and reasons being investigated thereby increasing the validity of the research findings.

It was evident that the mixed method (quantitative and qualitative methods) was necessary for this study in view of the nature of the research questions posed and the issues that required exploring. The use of mixed methods made it possible to get detailed, in-depth information in order to describe, interpret and make informed judgment concerning students' and teachers' perceived difficulties with economics topics and why they find those

topics difficult to learn and teach respectively (Creswell, 2008; Fraenkel & Wallen, 2008; Babbie, 2005). Despite the numerous advantages of mixed methods, the two methods are based on different assumptions. It is therefore possible that such different research techniques could produce different results (Creswell, 2008; Cohen, Manion & Morrison, 2008). This is a weakness in the use of the mixed method.

Population

The target population for the study consisted of all final year economics students and all economics teachers in all the 49 senior high schools in the Central Region of Ghana in the 2010/2011 academic year. The target population comprised 11079 final year economics students and 149 economics teachers. These figures were obtained from the Central Regional Ghana Education Service office in Cape Coast. The accessible population was made up of 468 final year economics students and 32 economics teachers. Students and teachers that constituted the accessible population were in high and low academic achieving schools.

Sample and Sampling Procedure

All the 49 senior high schools offering economics in 2010/2011 academic year in Central Region were stratified into high performing and low performing schools. This was done to have fair representation of students in terms of academic achievement since students were expected to respond to topics they perceive to be easy or difficult. The stratification of the schools

was based on data obtained from WAEC on the general performance in economics of schools in Central Region in West Africa Senior Secondary Certificate Examination (WASSCE) from 2006 to 2009. All schools with passes more than 80% (highest quintile) in economics over the four-year period were considered high performing and those with passes below 20% (lowest quintile) over the four-year period were considered low performing schools.

Three senior high schools under each categorization were randomly selected using a table of random numbers making a total of six schools for the study. From these three schools under each categorization, there were more than two classes that offered economics, hence two intact classes (one class that offered economics with mathematics and another class that offered economics without mathematics) were randomly selected using a table of random numbers from all the six schools because of limited time available for the study and cost implications. The schools that fell within the low performing schools category had an average class size of 42 students and schools within the high performing schools category mostly had between three and four streams of classes offering economics with an average class size of 38 students.

In all, 468 economics students from the different school categories participated in the study comprising 275 males and 193 females. The age of the students ranged from 12 to 25 years with a mean age of 18.8 years and a standard deviation of 1.28 year. In the high academic achieving schools there were 235 economics students and 233 economics students were in low academic achieving schools. Out of the total number of 468 economics

students who were selected for the study 200 offered economics with elective mathematics and 268 offered economics without elective mathematics. Three students each consisting one above average, average and below average in terms of performance in class in two classes (one class that offered economics with elective mathematics and another which offered economics without mathematics) were purposively selected from one each low performing and high performing schools which were selected randomly for the focus group interviews.

All the 32 economics teachers in the six sampled schools participated in the survey and were made up of 29 males and 3 females. More than 40% of teachers were in the age range of 31-40 years. All the teachers involved in the study had a bachelor's degree with more than 80% of them being professional teachers. Two teachers each in low and high performing schools were conveniently selected based on more than five years of teaching economics at the senior high school for a one-on-one interview.

Instruments

Instrument used for the study were Economics Students Questionnaire (ESQ); Economics Teachers Questionnaire (ETQ); Interview Protocol and Focus Group Interview Protocol.

Economics Students' Questionnaire

The Economics Students Questionnaire (ESQ) which consisted of both closed-ended and open-ended items, was designed and administered to final year economics students in the sampled schools. The ESQ had four sections (see Appendix A). Section 'A' sought data on the background of the students,

while Section 'B' was a Likert attitude scale which had a list of all the topics (major and sub topics) from the 2008 economics syllabus for senior high school for students to indicate how difficult or easy to understand. There was an option for the students to indicate whether a particular topic had not been taught by their teachers.

According to Johnstone cited in Ampiah (2001), it is possible to obtain a list of topics that students have difficulty with either through students' performance on tests designed to cover the content areas or through the perception of students. The first approach has been found to be very difficult, since it involves the writing of sufficient test items which seek an in depth coverage to reflect all the topics in a given syllabus. The second approach seeks to obtain students' responses on topics in a given syllabus as an indication of how difficult the topics are. A list of all the topics in the syllabus to which students indicated how difficult the topics were gave a fairly accurate view of students' understanding of topics in the syllabus.

To each topic on the questionnaire, students' responses ranged from "not taught", "very difficult to understand", "difficult to understand", "understand partially", "easy to understand", and "very easy to understand". Section C sought to find out from students reasons that accounted for their difficulties with the topics in the syllabus. The first part of Section 'C' was a Likert attitude scale with four reasons listed for students to either "strongly agree", "agree", "not sure", "disagree" or "strongly disagree". These reasons were listed based on some reasons cited by some authors on why students find some topics in economics difficult to learn (Watts & Lynch, 1989; Van Der Merwe, 2006; Parker, 2006).

The last part of Section C asked students to indicate other reasons that accounted for their difficulties with the topics. The last section, solicited from students measures to be put in place to overcome the difficulties they face with economics topics.

Economics Teachers' Questionnaire (ETQ)

The ETQ also had four sections (see Appendix B). Section 'A' asked teachers to provide information on their background. Section 'B' had a list of all topics (major and sub topics) in the 2008 senior high schools economics syllabus for the teachers to respond. To each topic teachers responses were to range from "not taught", "very difficult to teach", "difficult to teach", "partially difficult to teach", "easy to teach", and "very easy to teach". Section 'C' had a list of five reasons for teachers to respond as to whether they "strongly agree", "agree", "not sure", "disagree" or "strongly disagree". These reasons listed in section 'C' were also based on literature in economic education (Benzing & Christ, 1997; Dare, 1995). Teachers were also asked to indicate any other reasons for the difficulties with teaching senior high school economics topics. The last section listed six measures in overcoming teachers difficulties with some economics topics based on some literature (Leet & Houser, 2003; Goorha & Mohan, 2010). The last item under last section solicited teachers views on other measures that could be used to overcome the difficulties teachers face with some economics topics.

To ensure reliability of the two questionnaires the purpose of the research was explained to teachers and students who willingly accepted to participate in the study. There was also an agreement on the topics which were

difficult and those which were easy to teach and learn from teachers and students respectively. The analysis of the pre-test data showed high correlation between topics teachers found difficult to teach and those that students found difficult to learn. The questionnaires were valid as topics were taken from the senior high school economics syllabus and respondents were teachers and students of economics.

Interview Protocol

An interview protocol made of semi-structured questions was developed by the researcher based on some issues that emerged from the quantitative data. Some of the items on the interview protocol were in response to some reasons such as “full of diagrams and calculations”, “topics full of assumptions and theories” indicated by teachers for their difficulties. Some of the items on the interview protocol were: “What can you say about mathematics and diagrams in some topics that pose difficulties to some teachers”, “Do you think assumptions and theories in some of the topics pose difficulties to teachers” and “How do you make the teaching of economics more practical” (see Appendix C). Responses from the interview were similar to responses teachers gave on the ETQ indicating the reliability of the responses. The interview protocol was valid since the questions were based on issues that emerged from the survey data.

Focus group Interview Protocol

A focus group interview protocol was designed based on issues that emerged from the analysis of the students’ quantitative data (see Appendix D). Some of the items on the interview protocol were: “Why do you think

mathematics and diagrams contribute to students' difficulties with some of economics topics?", "Could you explain why you think lack of prescribed economics textbooks contribute to your difficulties with some of the topics?". The instrument was seen to be reliable as responses from students in the interview were similar to some of the responses from the ESQ. The instrument was valid since the items were based on issues that came up in the survey.

Pre-Testing of the Instruments

The students' and teachers' questionnaires were pre-tested in two senior high schools in the Western Region using 40 students and six teachers. The Western Region was used for the pre- testing because senior high school economics students shared similar characteristics in terms of background and academic achievements with students in Central Region. Some of the items were modified and the final instruments were designed.

Data Collection Procedure

The ESQ and ETQ were administered to students in the selected classes and all economics teachers in both school types. In order to ensure a high return rate, and also to clarify the meaning of some items to students and teachers, the questionnaires were administered by the researcher. The schools used in the study were visited first to establish rapport with teachers and students before the actual date for the data collection. Before data collection, copies of an introductory letter from the head of the Department of Arts and Social Sciences Education (DASSE), University of Cape Coast, were presented to heads of senior high schools where the study was conducted (see appendix E). The purpose of this introductory letter was to solicit the

cooperation between the researcher and teachers/students who served as respondents for the study. The data collection was done from February to March, 2011 in the second term of 2010/2011 academic year in the senior high schools. The data collection took six weeks to complete.

In each school, students and teachers selected for the study were given the questionnaires to complete. Students completed their questionnaires first before their economics teachers were located to complete theirs. Teachers whose classes were involved in the study left the classrooms since their presence during the completion of the questionnaire could influence the students' responses to the items. Instructions on the questionnaires were read out to students and confidentiality of their responses was assured before they were allowed to read the items on their own. The researcher was available when the questionnaires were being completed to ensure high return rate of the questionnaires and also to ensure all items on the questionnaires had responses. After the analysis of the survey data, six students each selected from the two school category for the focus group interviews were contacted and the interviews were conducted on their school premises. Four teachers from the four schools were also selected for one-on-one interviews which lasted on the average of 25 minutes for each interview.

Data Analysis

Students' perceived difficulties with topics were analyzed by the use of percentages, means and standard deviations. The items on the questionnaires were assigned values on a five-point Likert scale format (5-very easy to understand, 4-easy to understand, 3-understand partially, 2-difficult to

understand, 1-very difficult to understand). Since the scale was a five-point Likert-type scale format, three, the mid-value was chosen as an average value to which mean scores below it were considered perceived difficulties with topics. Mean scores above the average mean score of three were considered perceived easiness. The mean and standard deviation scores for each topic on ESQ were estimated. Hence, students perceived difficulties with topics were determined when a response had a mean of below 3. Topics not taught to students were also analyzed with the use of bar chart.

Teachers' perceived difficulties with economics topics were also analyzed using percentages, means and standard deviations. The items on the questionnaires were assigned values on a five-point Likert scale format (5-very easy to teach, 4-easy to teach, 3-partially difficult to teach, 2-difficult to teach, 1-very difficult to teach). The scale was a five-point Likert-type scale format, three, the mid-value was chosen as an average value to which mean scores below it were considered perceived difficulties with topics. Teachers' perceived difficulties with topics were determined if a response had a mean below 3. All responses with means above 3 were not considered as perceived difficulties. The items under Section C of both questionnaires were assigned values on a five-point Likert-type scale format (5-strongly agree, 4-agree, 3-undecided, 2-disagree, 1-strongly disagree). Mean scores above the average of 3 considered respondents' agreements with the statements and scores below the average meant respondents were not in favour of those statements. Other reasons given by students were put under themes and discussed. Students and teachers suggested measures under Section D on both questionnaires were also assigned values on a five-point Likert-type format (5-strongly agree, 4-agree,

3-undecided, 2-disagree, 1-strongly disagree). Mean scores above the average score of 3 considered respondents' agreements with the statements and mean scores below the average meant respondents were not in favour of those statements. Other measures given by students and teachers were also put under themes and were discussed.

Transcribed interviews from the students' focus group interviews and the one-on-one interviews with selected teachers were studied and issues relating to a particular research question were grouped under the research questions. These issues were quoted to support some of the discussions.

For hypothesis one, the difference between male and female economics students' perceived difficulties with topics in the economics syllabus, was determined by comparing their mean difficulties. An independent t-test for the two independent samples (male economics students and female economics students) was conducted to determine if there was a significant difference in the difficulties between these two groups. For hypothesis two, differences in difficulties between students offering economics with mathematics and students offering economics without mathematics, was determined by comparing their mean difficulties. An independent sample t-test was conducted to determine if there was any significant difference between these two groups of students.

CHAPTER FOUR

RESULTS AND DISCUSSION

In this chapter, the findings obtained from the analyses of topics in the senior high school economics syllabus that students perceived to be difficult are presented. Teachers' perceived difficulties with economics topics are also presented. Students and teachers reasons for their difficulties with some of the economics topics and measures that could be adopted to overcome such difficulties are presented. A test of differences between male and female economics students' perceived difficulties with economics topics is presented. Another test of difference in difficulties with topics between students offering economics with mathematics and students offering economics without mathematics is also presented. The chapter is divided into two sections. The first section deals with the presentation of findings from the quantitative data while the second part deals with the presentation of findings from the qualitative data interspersed with some quantitative presentation.

Senior High School Economics Topics that Students and Teachers find Difficult

Research question one sought to find out topics students and teachers find difficult to learn and teach respectively in the senior high school

economics syllabus. The results in Table 1 indicate that out of the 26 major topics in the senior high school economics syllabus, students' perception was that 5 were difficult to learn.

Table 1: Percentage Distribution of Students' Perceived Difficulties with Major Topics in the SHS Syllabus

Topic	N	VEU	EU	UP	DU	VDU	Mean	SD
		%	%	%	%	%		
1. Price theory (Demand)	468	10.3	28.4	25.2	18.8	17.3	2.96	1.2
2. Cost and revenue concepts	453	10.4	32.5	30.0	15.2	11.9	3.10	1.1
3. Market structures	438	9.6	28.3	26.7	16.0	19.4	2.92	1.2
4. Theory of consumer behaviour	466	10.7	29.2	22.4	13.9	23.8	2.98	1.3
5. National income accounting	354	4.5	16.7	19.2	45.2	14.4	2.51	1.0
6. International trade	406	12.1	25.9	15.4	22.2	24.4	2.79	1.3

VEU-Very Easy to Understand, EU-Easy to Understand, UP-Understand Partially, DU-Difficult to Understand, VDU-Very Difficult to Understand

The results in Table 1 further shows that with the exception of the topic "Cost and revenue concepts" which had a mean slightly above 3, all the mean scores for the rest of the topics were below 3 (M=3.10, SD=1.1), which is the average mean score. This indicates difficulties with the topics. Over

15% of students who had been taught the topics indicated they understood partially all the topics on Table 1.

This means that they neither found the topics easy nor difficult to understand. The topic “National income accounting” seemed to pose the greatest difficulty to students. This is evident from the results in the table as 59.6% out of 354 students (M=2.51, SD=1.0) who had been taught the topic “national income accounting” indicated it was either “difficult to understand” or “very difficult to understand”. This is followed by the topic “international trade” which had a mean of 2.79 and more than 45% out of a total of 406 students who had been taught the topic indicated they either found the topic difficult to understand or very difficult to understand.

The results in Table 1 illuminate the findings of studies of some economic education researchers (Dare,1995; Van Der Merwe, 2006; Repede & Burson 2009; Yidana, 2007) which found topics such as “International trade”, “National income accounting”, “Price theory”, “Market structures” and others difficult for students to learn.

Furthermore, Chief Examiners’ Report (2005; 2006) indicated students have difficulty with the topics “Market structures”, “National income”, “International trade” and “Theory of production”.

Students’ Perceived Difficulties with Sub Topics in the SHS

Economics Syllabus

Information regarding students’ difficulties with some sub topics in the SHS syllabus is presented in Table 2.

Table 2: Students' Perceived Difficulties with Sub Topics in the SHS Syllabus

Topic and sub topic	N	VEU %	EU %	UP %	DU %	VDU %	Mean	SD
Price theory (Demand)								
1. Concept and types of elasticity of demand and its importance	468	8.3	27.4	34.4	21.6	8.3	3.05	1.1
Price theory (supply)								
2. Concept of elasticity of supply and its importance	465	8.2	24.7	35.3	24.1	7.7	3.01	1.1
Market structures								
3. Concept of an equilibrium of a firm and of industry	447	7.8	29.3	36.9	16.8	9.2	3.09	1.1
Theory of consumer behavior								
4. Concepts of an equilibrium of a consumer	457	9.2	29.1	30.8	22.1	8.8	3.07	1.1
5. Substitution and income effects	393	4.8	21.9	31.9	22.6	18.8	2.71	1.2

Table 2 Cont'd

Topic and sub topic	N	VEU %	EU %	UP %	DU %	VDU %	Mean	SD
National income accounting								
6. National income determination	233	7.7	24.5	32.2	30.0	5.6	2.98	1.0
7. The multiplier concept and measurement data	206	3.9	20.4	30.6	18.9	26.2	2.56	1.1

VEU-Very Easy to Understand, EU-Easy to Understand, UP-Understand Partially, DU-Difficult to Understand, VDU-Very Difficult to Understand

The table indicates that sub topics like “Concept and types of elasticity of demand and its importance” under the major topic “Price theory (Demand)”, “Concept of elasticity of supply its importance” under the major topic “Price theory (Supply)”, “Concept of an equilibrium of a firm and of industry” under “Market structures” pose some difficulties to students. This is evident as more than 30% of the students indicated they understood those topics partially with means slightly above 3.

However, sub topics like Substitution and income effect, National income determination and the Multiplier concepts and measurement data were found to be difficult to understand with means 2.71, 2.98 and 2.56 respectively. Results in Table 2 compliment some studies cited in the literature

(Dare, 1995; Yidana, 2007) which found Income determination difficult for student to learn.

It is interesting to bring to light major topics students found difficult and what sub-topics under them which also pose difficulties to students. Analysis of such major topics and their sub-topics for students in high performing and low performing schools has been presented in Table 3. Table 3 reveals that all the major topics and sub-topics were difficult for students in the low performing schools. However, in the high performing schools topics like “Consumer behaviour”, “Substitution and income effect”, National income accounting”, “Multiplier concept and measurement data” and “International trade” were perceived to be difficult with means of 2.82, 2.79, and 2.98 respectively.

Results in Table 3 further indicate that the major topic “National income” which poses difficulties to students had all its sub topics perceived by students in both high performing and low performing as difficult. This implies that students found some sub-topics under major topics difficult. What therefore made a major topic difficult could be due to one or two of the sub-topics but definitely not all of the sub-topics. The results in the table have mirrored studies by some authors cited in the literature (Walstad & Soper, 1988; Dare, 1995; Caropreso & Haggerty, 2000; Van Der Merwe, 2006; Yidana, 2007).

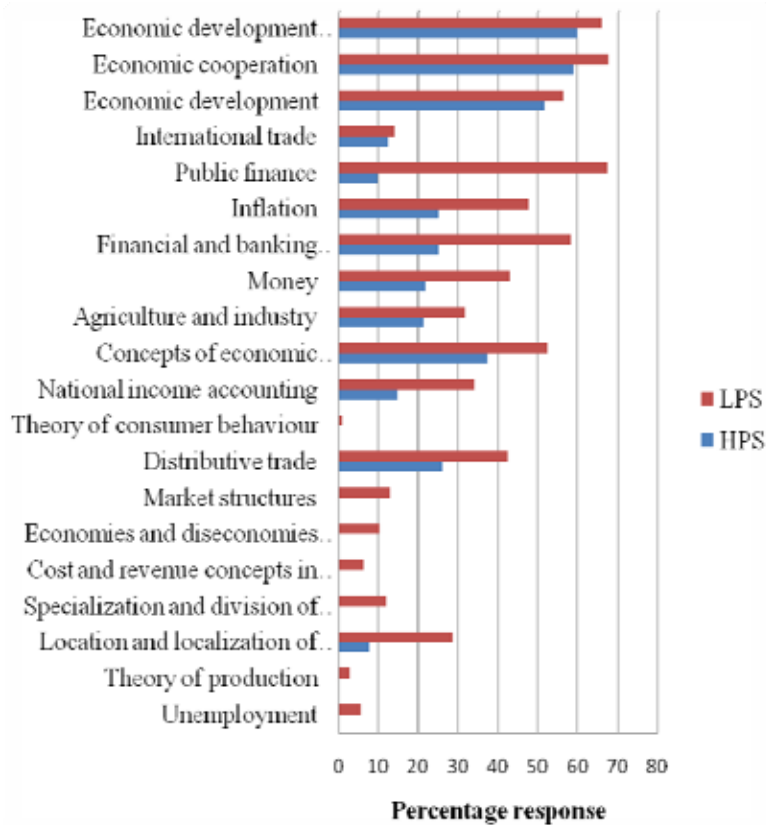
Table 3: Mean Distribution of Students' Difficulties with Topics and Sub-Topics in the SHS Economics Syllabus by School Type

Topic	High performing schools			Low performing schools		
	N	Mean	SD	N	Mean	SD
1. Price theory (Demand)	235	3.27	1.2	233	2.64	1.3
1a. Concept and types of elasticity of demand and its importance	235	3.22	0.9	233	2.88	1.2
2. Concept of elasticity of supply and its importance	235	3.22	0.9	230	2.80	1.1
3. Market structures	235	3.0	0.9	203	2.74	1.2
3a. Concept of an equilibrium of a firm and of industry	234	3.27	0.9	213	2.90	1.2
4. Consumer behaviour	235	2.82	1.3	231	2.95	1.4
4a. Concepts of an equilibrium of a consumer	232	3.06	1.1	225	3.09	1.1
4b. Substitution and income effects	223	2.79	1.1	170	2.60	1.2
5. National income accounting	200	2.86	1.1	154	2.06	0.8
5a. National income determination	159	3.30	0.9	74	2.29	0.8
5b. The multiplier concept and measurement data	141	2.92	1.0	65	1.80	1.1
6. International trade	206	2.98	1.3	200	2.59	1.3

Students were given the opportunity to indicate topics which had not been taught by their teachers in class. Percentage of students in the two school types who indicated a particular topic had not been taught is presented in Figure 1. The figure shows that 20 out of the 26 major topics in the syllabus were indicated by some students in low performing schools as not taught compared to 13 major topics in the high performing schools. Topics like “Economics development”, “Economic cooperation” and “Economic development planning” were indicated by over 50% of students in both school type as not taught. These topics happen to be the last three topics in the economics syllabus. Some classes in some schools were about to receive tuition by their teachers on these topics at the time of data collection.

However, topics like National income accounting, Public finance and international trade were topics which should had been taught in all schools at the time of data collection as they appear early in the economics syllabus but had not been taught in some schools.

Sometimes when students indicate some topics had not been taught by their teachers it means students were absent in class when topics were taught. In some cases however, some teachers had skipped some of the topics. Topics like “National income accounting” and “International trade” indicated by over 12% of students in both school types as not taught were also indicated by the students as being difficult to learn.



LPS=Low Performing Schools HPS=High Performing Schools

Figure 1: **Major Economics Topics Students Indicated Not Taught by School Type.**

Teachers' perceived difficulties with topics in the economics syllabus have been presented in Table 4. The Table shows that out of the 26 major topics in the syllabus, four were perceived by teachers as being difficult to teach.

Table 4: Percentage Distribution of Teachers' Difficulties with Topics in the SHS Economics Syllabus

N=32

Topic/sub-topic	VET	ET	PDT	DT	VDT	Mean	SD
	%	%	%	%	%		
1.Theory of consumer behavior	18.7	21.9	28.1	31.3	-	3.28	1.1
1a. Substitution and income effect	12.5	15.6	37.5	21.9	12.5	2.93	1.2
2. National income accounting	6.2	31.3	9.4	40.6	12.5	2.78	1.2
2a. National income determination	9.4	25.0	15.6	40.6	9.4	2.84	1.2
2b. The multiplier concept and measurement data	6.2	34.4	12.5	37.5	9.4	2.90	1.2

VET-Very Easy to Teach, ET-Easy to Teach, PDT-Partially Difficult to Teach

DT-Difficult to Teach, VDT-Very Difficult to Teach

Results in Table 4 further indicate “National income accounting” (M=2.78, SD=1.2) posed the greatest difficulty to teachers. Out of 32 teachers, 53.1% responded either “Difficult to teach” or “Very difficult to teach” to this item. This is followed by “National income determination” and “the Multiplier concept” which are all sub-topics under the major topic National income accounting.

This finding compliments the findings of Dare (1995) who reported that economics teachers in Ghanaian secondary schools find difficulty in delivering lessons on some macroeconomics concepts such as Income determination.

The WAEC Chief Examiners' Reports (2003-2006) have also cited topics such as Market structures, Utility concepts, Theory of production, Cost and revenue concepts in production, National income, Income determination and International trade as difficult for students. Some of these topics like "Market structures", "Income determination" and "International trade" are part of the topics perceived by students and teachers as being difficult to learn and teach respectively. This seems to suggest that students' difficulties in learning these topics could be due to teachers' difficulties in teaching these topics. It is also possible that some topics are not understood by some students as teachers skip the topics and teach those they find relatively easy to teach.

Students' Difficulties with Senior High School Economics Topics by Gender

To determine whether there was statistically significant difference in perceptions of male and female economics students, a two-tailed independent sample t-test was computed see Table 5. Results in Table 5 indicate that female economics students' difficulties with topics in the economics syllabus was significantly lower ($M=2.62$, $SD=0.62$) than their male counterparts ($M=3.15$, $SD=0.63$). The results further show that ($p<0.001$, $t=9.03$, $df=466$) females students perceived more economics topics to be difficult compared

to male students. The size of this difference was found to be $r = 0.38$ which represent a medium sized effect.

Table 5: Differences in Students' Difficulties with Topics in the SHS Economics Syllabus by Gender

Gender	N	M	SD	t	df	P
Male	299	3.15	0.6	9.03	466	0.001*
Female	169	2.62	0.6			

*Significant, $P < 0.05$

Therefore, the null hypothesis that there is no difference between male and female students' difficulties with topics in the senior high school economics syllabus was rejected.

This finding supports what some authors (Walstad & Robson, 1997; Lumsden & Scott, 1987) have reported in their studies that there was a significant difference between male and female economics students understanding of economics at the high school level. However, the finding contradicts the finding of Siegfried (1979) who reported that there appear to be no difference between male and female learning of economics in secondary schools.

To find out whether there were any significant differences in how male and female students perceived the topics an independent sample t-test was computed for all the major topics by gender. The results are presented in Table 6.

Table 6: Differences in Students' Difficulties with Major Topics in the SHS Economics Syllabus by Gender

Topics	Sex	N	Mean	SD	P
1. Fundamental concepts in economics	M	275	4.24	0.7	0.483
	F	193	4.19	0.8	
2. Factors of production	M	275	4.36	0.6	0.223
	F	193	4.43	0.7	
3. Population	M	275	4.22	0.7	0.001*
	F	193	4.45	0.7	
4. Economic systems	M	275	3.83	0.8	0.343
	F	193	3.91	0.9	
5. Unemployment	M	273	3.95	0.9	0.001*
	F	182	4.37	0.8	
6. Price theory (Demand)	M	275	3.12	1.1	0.001*
	F	193	2.73	1.4	
7. Price theory (Supply)	M	275	3.32	1.1	0.058
	F	192	3.12	1.2	
8. Theory of production	M	272	3.65	0.9	0.923
	F	190	3.66	1.0	

*Significant, $P < 0.05$

Table 6 Cont'd

Topics	Sex	N	Mean	SD	P
9. Location and localization of industries	M	234	4.05	0.8	0.007*
	F	149	3.80	0.9	
10. Specialization and division of labour	M	265	4.03	0.7	0.365
	F	175	3.96	0.9	
11. Cost and revenue concepts in production	M	265	3.24	1.1	0.291
	F	175	3.01	1.2	
12. Economies and diseconomies of scale	M	266	3.23	1.1	0.092
	F	178	3.04	1.2	
13. Market structures	M	261	3.09	1.2	0.001*
	F	177	2.68	1.4	
14. Distributive trade	M	213	3.56	0.9	0.867
	F	95	3.54	1.0	
15. Theory of consumer behaviour	M	275	2.88	1.3	0.839
	F	191	2.90	1.4	
16. National income accounting	M	233	2.78	1.1	0.001*
	F	121	1.99	0.8	

Table 6 Cont'd

Topics	Sex	N	Mean	SD	P
17. Concept of economic growth and economic development	M	200	3.66	0.9	0.064
	F	58	3.39	1.1	
18. Agriculture and industry	M	191	4.08	0.8	0.159
	F	153	4.20	0.8	
19. Money	M	235	4.37	0.6	0.309
	F	82	4.45	0.6	
20. Financial and banking institutions	M	198	3.86	0.8	0.932
	F	75	3.85	0.9	
21. Inflation	M	214	3.94	0.7	0.001*
	F	84	3.48	1.0	
22. Public finance	M	184	3.84	0.8	0.737
	F	84	3.88	1.0	
23. International trade	M	238	2.93	1.3	0.013*
	F	168	2.58	1.4	
24. Economic development	M	196	3.81	0.7	0.008*
	F	47	3.36	1.0	
25. Economic cooperation	M	137	3.58	0.8	0.011*
	F	34	3.02	1.1	
26. Economic development planning	M	140	3.56	0.8	0.032*
	F	33	3.15	1.4	

Results in Table 6 show that significant differences in perceived difficult topics existed in 11 out of 26 major topics between male and female students. Some of such major topics were “Price theory (Demand)” with male mean score =3.12, female mean score=2.73, “Market structures” male mean score=3.09, female mean score=2.68, “National income accounting” with male mean score=2.78, female mean score =1.99 and “International trade” with male mean score=2.93, female mean score=2.58. Sub-topics under these major topics which are full of mathematics were perceived to be difficult by more females as compared to their male counterparts. This seems to suggest that most female economics students perceive topics involving mathematical computations not as favourable as male students do.

However, the significant difference in male and female students’ perception towards topics like “Economic development”, “Economic cooperation” and “Economic development planning” was due to the small number of female students who indicated those had been taught by their teachers.

Differences in Mathematics and Non-mathematics Students’ Difficulties with SHS Topics

Hypothesis two states that there is no significant difference in difficulties with senior high school economics topics between students offering economics with mathematics and students offering economics without mathematics. To test this hypothesis, a two-tailed independent t-test was used. The descriptive statistics obtained is presented in Table 7.

Table 7: Mathematics and Non-Mathematics Students' Difficulties with Topics in the SHS Economics Syllabus

Programme	N	M	SD	t	df	P
Students offering elective mathematics	200	3.16	0.6	6.77	466	0.001*
Students not offering elective mathematics	268	2.76	0.7			

Significant, *P<0.05

Results in Table 7 indicate that perception of difficulties of students offering economics with mathematics was significantly higher (M=3.16, SD=0.6) as compared to their counterparts offering economics without mathematics (M=2.76, SD=0.7). This means that students offering economics without mathematics perceive more economics topics to be difficult compared to students who offer economics with mathematics. The size of this difference was found to be $r = 0.29$ which represent a medium sized effect.

Therefore, there was a significant difference ($P < 0.001$, $t=6.77$, $df=466$) in difficulties with topics between student offering economics with mathematics and students offering economics without mathematics; hence the null hypothesis was rejected.

The finding in Table 7 suggests that mathematics has an influence on the learning of some economics topics. This has also been reported in studies by other researchers (Gamoran & Hannigan, 2000; Chiang &

Wainwright, 2005; Focardi & Fabozzi, 2010; Hoag & Benedict, 2010). For example, Chiang and Wainwright (2005) reported that the use of mathematics in economics helps the economists to use symbols in problem statement and draws upon mathematical theorems which facilitates reasoning. Thus in this study students who did not offer elective mathematics in addition to economics had difficulties in learning such topics which involved a lot of mathematics.

The independent sample t-test was computer for all the major topics in the syllabus to find out whether significant difference existed among the topics between students offering economics with mathematics and students offering economics without mathematics. The results are presented in Table 8.

The results in Table 8 indicate that there were significant differences existed in 13 out of 26 major topics between students offering economics with mathematics and students offering economics without mathematics. From the topics which had significant differences which involve a lot of mathematical computations are “Price theory (Demand)”, “Price theory (Supply)”, “Theory of production”, “Cost and revenue concepts in production”, and “National income accounting”. This suggests that students with weak mathematics knowledge find most topics involving mathematics difficult to learn. However, differences in perceived difficulties among topics like “Economic development”, “Economic cooperation” and “Economic development planning” was due to the small number of students who responded not taught to these topics. The result in Table 8 compliments the finding that mathematics has an influence on the learning of some economics

topics reported in the literature (Chiang & Wainwright, 2005; Hoag & Benedict, 2010).

Table 8: The Offering of Mathematics and Differences in Students' Difficulties with Senior High School Economics Topics

Topics	Programme	N	Mean	SD	P
1. Fundamental concepts in economics	EM	200	4.35	0.62	0.06
	EWM	268	4.26	0.84	
2. Factors of production	EM	200	4.45	0.6	0.93
	EWM	268	4.34	0.6	
3. Population	EM	200	4.29	0.6	0.572
	EWM	268	4.33	0.7	
4. Economic systems	EM	200	3.92	0.8	0.206
	EWM	268	3.82	0.8	
5. Unemployment	EM	196	4.10	0.8	0.689
	EWM	259	4.13	0.8	
6. Price theory (Demand)	EM	200	3.21	1.2	0.001*
	EWM	268	2.77	1.2	
7. Price theory (Supply)	EM	200	3.40	1.0	0.006*
	EWM	268	3.11	1.1	
8. Theory of production	EM	199	3.77	0.9	0.019*
	EWM	263	3.56	0.9	

EM-Economics with Mathematics, EWM-Economics Without Mathematics

Table 8 Cont'd

Topics	Programme	N	Mean	SD	P
9. Location and localization of industries	EM	179	3.97	0.7	0.765
	EWM	204	3.94	0.9	
10. Specialization and division of labour	EM	196	4.10	0.7	0.010*
	EWM	244	3.92	0.8	
11. Cost and revenue concepts in production	EM	198	3.31	1.1	0.005*
	EWM	255	3.01	1.2	
12. Economies and diseconomies of scale	EM	195	3.29	1.2	0.36
	EWM	249	3.05	1.2	
13. Market structures	EM	193	3.07	1.2	0.321
	EWM	245	2.81	1.3	
14. Distributive trade	EM	136	3.61	0.9	0.384
	EWM	172	3.51	1.0	
15. Theory of consumer behaviour	EM	200	2.85	1.3	0.573
	EWM	266	2.92	1.3	
16. National income accounting	EM	152	2.64	1.1	0.041*
	EWM	202	2.40	1.0	
17. Concept of economic growth and economic development	EM	113	3.76	0.8	0.016*
	EWM	145	3.47	1.0	

Table 8 Cont'd

Topics	Programme	N	Mean	SD	P
18. Agriculture and industry	EM	143	4.13	0.7	0.849
	EWM	201	4.14	0.8	
19. Money	EM	145	4.42	0.6	0.437
	EWM	172	4.36	0.6	
20. Financial and banking institutions	EM	137	4.05	0.7	0.001*
	EWM	136	3.66	0.9	
21. Inflation	EM	143	3.93	0.7	0.24
	EWM	155	3.70	0.9	
22. Public finance	EM	154	4.07	0.8	0.001*
	EWM	134	3.61	0.9	
23. International trade	EM	182	3.06	1.3	0.001*
	EWM	224	2.56	1.3	
24. Economic development	EM	103	3.85	0.7	0.020*
	EWM	113	3.58	0.9	
25. Economic cooperation	EM	83	3.62	0.8	0.019*
	EWM	88	3.32	0.9	
26. Economic development planning	EM	92	3.64	0.9	0.028*
	EWM	81	3.30	1.0	

*Significant, P<0.05

**Reasons Accounting for Students' Difficulties with Topics in the Senior
High School Economics Syllabus**

Students were given four reasons on a Likert scale format to respond. The response options were: strongly agree, agree, not sure, disagree or strongly disagree (see Appendix A). These statements focused on economics students' reasons that account for their difficulties in learning some of the topics. The four reasons were based on reported reasons cited in the literature. Percentage of students' responses on reasons for their difficulties with some economics topics is presented in Table 9.

Table 9: Percentage Distribution of Students' Responses on Reasons for their Difficulties with Some Topics in the SHS Economics Syllabus

Reasons	SA	A	NS	D	SD	Mean	SD
1. Full of mathematics and diagrams	34.6	35.7	8.5	14.1	7.1	3.76	1.3
2. Abstract and boring to read	18.2	32.1	10.9	29.9	9.0	3.19	1.3
3. Bulky content	32.7	42.1	9.2	14.1	1.9	3.88	1.1
4. Lack of textbooks and other teaching materials	21.6	24.8	4.3	29.9	19.4	2.97	1.5

SA-Strongly Agree, A-Agree, NS-Not Sure, D-Disagree,

SD-Strongly Disagree

Results in Table 9 further shows that majority of the students (74.8%) with mean of 3.88 indicated that the bulky content nature of economics made some of the topics difficult to understand. Also, the result shows that a little more than 70% of students indicated mathematics and diagrams made some topics difficult to understand. About 50% of students indicated their difficulties were not due to lack of textbooks and other teaching materials.

Apart from these suggested reasons students were asked to indicate any other reason(s) that accounted for their difficulties with the topics. The spectrum of reasons indicated by students was group under broad themes which have been summarized in Table 10.

The table reveals that some proportion of the students 11.2% stated complicated diagrams involved in the topics as reason for their difficulty. According to them worsened teachers' explanations regarding the diagrams were inadequate coupled with teachers' inability to use practical examples to explain some of the concepts. About 11% of students blamed their teachers for not taking their time to explain some of the difficult concepts but rushed through the topics to enable them complete the topics before the final examination.

Some students (3.2%) also indicated poor attitude of teachers such as teachers not being regular to class, lack of commitment to teaching of the subjects etc as reason for their difficulties with some of the topics.

Table 10: Percentage Distribution of Students' Responses on Reasons for Difficulties with Topics in the SHS Economics Syllabus

Reasons	N	%
1. Full of mathematics and diagrams	33	13.3
2. Full of theories and assumptions	10	4.0
3. Insufficient explanation by teachers	22	8.9
4. Inadequate time allotted for topics	5	2.0
5. Different views in textbooks	5	2.0
6. Lack of practical examples	10	4.0
7. Lack of textbooks and other teaching and learning materials	20	8.1
8. Bulky content	12	4.8
9. Poor teacher attitude	8	3.2
10. Full of complicated diagrams	28	11.2
11. Lack of teaching skills of teachers	7	2.8
12. Abstract and boring to read	9	3.6
13. Technical nature of topics	12	4.8
14. Teachers rush through topics	28	11.3
15. Other	39	16.0

Students gave other reasons which do not fall under any of the reasons listed in Table 10 hence all had been put under “Others”. Some of the reasons were lack of motivation from the economics teachers and negative

attitude of students towards some of the difficult topics and distraction of the academic lessons due to extra curricular activities and non-payment of school fees

Two focus group interviews were organized with some selected students from both school-types to give further insights into some of the issues which emerged during the survey. In each school-type, the focus group interview comprised three male and female students. With regard to some topics being full of mathematics and diagrams, students lamented on the complicated nature and similarity among some of the diagrams which confused them. Two students remarked:

Teachers do not direct us on to how to answer some questions with diagrams... market structures for example is full of diagrams which are very confusing moreover there are too many technical words used when explaining and also we are sometimes lectured instead of been taught (Student A, School X).

Theory of consumer behaviour it is too complex for my liking, the diagrams are too complex and difficult to comprehend, for example in drawing the imaginary line to separate the income effect from the substitution effect is complex which makes it more difficult to understand the concept and some of the concepts are not practical (Student A, School Y).

The explanation of the students suggest that graphs especially, the complicated ones pose difficulties to students. This finding was also made by Cohen et al (2001) that relatively complicated graphs give students little time to absorb and may be counterproductive.

The interview also revealed that students found most of the explanations by their teachers concerning some of the concepts and diagrams inadequate as one student put:

When it comes to diagrams and calculations, the explanation of the teacher is too poor to understand...the teacher at times refuses to do the calculations aspect with us in the classroom, especially in demand and supply (Student B, School X).

The students also stressed on overloaded topics in the syllabus and the content of most of the topics being bulky, this is in line with aspect of findings of some researchers reported in the literature (Dare, 1995, Yidana, 2007). An example was given by one student who indicated the many sub topics under a particular topic makes understanding of the topic difficult:

...some topics are too broad to be treated
like demand and supply; national income
(Student C, School X).

It came to light that due to limited time available to complete the syllabus, some teachers rush through the topics and skip some of the topics. This claim by the students is reinforced by a teacher's comment in an interview:

... so what at times some teachers do is that they skip some of the difficult topics and teach those they are comfortable with (Teacher A, School X).

This suggests that students will have to learn skipped topics on their own and this could result in students' inability to grasp some of the content. The focus group interview further illuminated students' thoughts concerning the abstract nature of some of the topics. Students were asked what they thought about theories and assumptions with regard to some of the topics. Their response was that some of the concepts lacked touch with the outside world as one student lamented:

It is full of a lot of unrealistic theories...lack of practicality in the mode of teaching... assumptions made are not be based on present day situation especially in Ghana (Student C, School X).

Students indicated that most of the examples given by teachers were not linked to their everyday life which will facilitate their understanding of the concepts, hence making the topics abstract and hence difficult to learn. This finding was one of the reasons students gave for their difficulties in learning concepts in economics in a study by Hoag and Benedict (2002) in USA.

The last issue that came up during the focus group interview concerned the lack of textbooks and other teaching and learning materials. Students stressed that there were no prescribed standard textbooks for both students and teachers. Teachers therefore use different textbooks in teaching

and the students use other textbooks which sometimes generate confusion concerning certain concepts. For example,

Some of the textbooks are good. I do compare textbooks and I have noticed that the language in one textbook used is very simple to understand as compared to the other. For instance, textbook 'A' words are quite technical as compared to textbook 'B' (Student C, School Y).

Textbooks contribute much to the difficult aspect because for example, textbook X explains some diagrams on the surface and when you try to get the understanding it is difficult as compared to textbook Y and the rest... how some of the textbooks even draw some of the diagrams may be different from what the teacher draws... so it is confusing (Student C, School X).

Ironically, most of the studies reported in the literature did not mention textbooks as source of students' difficulties with topics, except Dare (1995) study in Ghana. This may be due to the fact that in the advanced countries where most of the studies had been done, lack of standard textbooks is not an issue.

Students explained during the focus group interview that it is not that economics textbooks are scarce but there are a lot on the market hence it is difficult to locate the appropriate one. This results in students buying

different textbooks by different authors which generate confusion and difficulties in learning some concepts when one considers the language and how the authors explain their diagrams.

Teachers' Reasons for Difficulties with Some Topics in the Senior High School Economics Syllabus

Teachers were asked to respond to five reasons on a Likert scale that could account for their difficulties with some topics in the syllabus (Appendix B). These reasons were based on some economic education researchers cited reasons in the literature (Dare, 1995; Dorman, 2002). The responses are in Table 11.

The table shows that majority (93.7%) of teachers with a mean of 4.18 indicated that lack of simplified and suitable textbooks for senior high school economics accounted for teachers' difficulties with some of the topics. This is evident when one considers the proportion of teachers who responded to "strongly agree" and "agree" to item 33. This reflects the high proportion of teachers (81.3%) who indicated that dearth of teaching and learning materials is of the reasons that accounted for their difficulties with some topics in the syllabus.

However, over 40% of teachers with a mean of 3.21 disagreed that mathematics and diagrams in the topics accounted for their difficulties with some of the topics, while 50% of teachers answered that mathematics and diagrams were two reasons that accounted for their difficulties. Furthermore, over 70% of the teachers agreed to the fact that poor mathematics

background of some students and the abstract nature of some of the topics accounted for their difficulties with some of the topics.

Teachers were asked to indicate other reason other than the ones given to them accounting for their difficulties with some topics in the syllabus. Only less than half of the teachers indicated other reasons accounting for their difficulties. Reasons such as large class sizes, poor knowledge of economics issues by students, economics not taught at the Junior high School, lack of preparation of some teachers were given by the teachers.

Table 11: Percentage Distribution of Teachers' Responses on Reasons for their Difficulties with Some Topics in SHS Economics Syllabus

Reasons	SA	A	NS	D	SD	Mean	s.d
1. Lack of teaching learning materials	21.9	59.4	9.4	9.4	-	3.93	0.8
2. Lack of simplified and suitable textbooks	28.1	65.6	3.1	3.1	-	4.18	0.6
3. Abstract nature of some topics	34.4	40.6	9.4	12.5	3.1	3.90	1.1
4. Some of the topics are full of mathematics	21.9	28.1	6.3	37.5	6.3	3.21	1.3
5. Some of students have poor mathematical background	34.4	43.8	3.1	15.6	3.1	3.90	1.1

SA-Strongly Agree, A-Agree, NS-Not Sure, D-Disagree,

SD-Strongly Disagree

Individual interviews with four economics teachers revealed that some teachers found some of topics difficult to teach due to the technical nature of those topics. Some teachers had difficulty explaining diagrams to students. As remarked by two teachers from different schools:

When you look at the diagrams involved in consumer behaviour it is technical that at their level it difficult to understand the way some diagrams are drawn and their meaning, how they could read meaning to the diagrams...if you are talking about budget line, consumer is in equilibrium, to us the teachers at times it's a difficult topic, so in attempt to also deliver to the students also becomes a difficult task (Teacher A, School X).

The topics have multiple dimensional meanings.eg each topic has different dimensions and different principles all together to consider so some teachers may find it very difficult to handle for example, demand and supply, when both demand and supply lines are drawn on the same curve to touch quantity demand or quantity supply, indications to show whether it relates to the consumer or producer becomes a problem” (Teacher A, School Y).

This is a demonstration of teachers' inability to explain some concept to students when it comes to diagrams, and corroborates the finding by Dorman (2002) that technicalities involved in some microeconomics topics account for difficulties teachers have when it comes to lesson delivery.

Teachers attributed some of their difficulties to assumptions and abstract nature of some theories. They indicated that in an attempt to enhance students' understanding of the concepts they need to link the concept to practical situations. This to them is one of the most challenging tasks. This is how one teacher describes his difficulty with regards to this issue:

Linking theoretical concepts to the real world situations becomes difficult, for example, market structures (perfect competition), You realize that in an attempt to explain what perfect competitions; where you have many buyers and sellers, products being identical, when you go to the real market the products are not identical, different taste and their sizes, so how do you create a hypothetical markets for student to understand (Teacher B, School X).

Two other teachers rather looked at this problem from a different angle. They indicated that most of the good textbooks they use were foreign; hence their practical examples to explain some of the concepts did not suite the Ghanaian context. The teachers cited the use of sub-standard textbooks by students as sometimes creating some confusion during economics lessons.

The interview also brought to light the issue of poor background of economics students which made teaching difficult. All the teachers stressed that unlike other subjects such as science and mathematics economics was not taught at the Junior High Schools (JHS). Students therefore do not have any previous knowledge of the topics. This coupled with poor mathematics

background of students made introducing new concepts involving mathematics to them a difficult task.

Another striking observation by three teachers out of the four teachers interviewed was the training teachers receive from the universities. Teachers stressed that they were not able to grasp some of the concepts especially the most abstract and technical in the university, hence teaching such topics to students was a problem. This is how a teacher lamented on the training at the university:

Lecturers go fast in lecturing, and for a person going out to teach the methods of teaching is inadequate...lecturers sometimes combine two topics at a session and students always think of preparing to obtain high scores and grades at the end (Teacher B, School Y).

The above reasons given by the teachers raise some questions about the way professional training of teachers is conducted in training institutions Ghana.

Suggested Measures to Improve Teaching and Learning of Perceived Difficult Topics in SHS Economics Syllabus

Research question four sought to find out from students and teachers measures that could be put in place for students and teachers to overcome their difficulties with topics in the SHS economics syllabus.

On the Economics students' questionnaire, students were asked to respond to a five point Likert scale items. There were five items with

responses ranging from strongly agree, agree, undecided, disagree to strongly disagree (see Appendix A). These five items were based on some reported measures in the literature (Becker & Watts, 2001; Maxwell, Mergendoller & Bellisimo, 2005) that could be used to improve teaching and learning of economics. Students' responses are presented in Table 12.

Table 12: Students' Responses on Measures to Overcome Students' Difficulties with Some Topics in SHS Economics Syllabus

Measures	SA	A	NS	D	SD	Mean	SD*
1. Teachers should simplify complicated diagrams	62.0	31.2	1.9	3.4	1.5	4.48	0.8
2. Frequent use of practical examples	62.4	34.8	1.1	1.3	0.4	4.56	0.6
3. Frequent use of discussions in class	53.6	38.9	3.4	2.8	1.3	4.40	0.8
4. Embarking on field trips often in teaching some topics	52.1	30.3	8.5	7.7	1.3	4.42	0.9
5. Frequent use of class experiments	42.1	47.2	4.7	4.7	1.3	4.23	0.8

SA-Strongly Agree, A-Agree, NS-Not Sure, D-Disagree,

SD-Strongly Disagree

The results in Table 12 show that generally, more than 80% of the students with means of more than 4.00 were in favour of all the measures listed for them to respond considering the number of students who responded to “strongly agree” and “agree”.

Majority of the students (97.2%) with a mean of 4.56 favoured the frequent use of practical examples by teachers when teaching perceived difficult topics. This finding resonates with some researchers who advocate for the use of practical situations to complement the teaching of economic concepts and theories in the classrooms (Ziegert, 2002; McGoldrick, 2002; Lopez, 2009).

Again, over 90% of students agreed that teachers should simplify complicated diagrams. Teachers could make this simple when group assignments are given to students to work on those topics. For students to know how to draw and explain some of the complicated diagrams, individual student could be asked to draw such diagrams in class for others to see and comment.

Students were further asked to indicate any other reason(s) that could be adopted to improve the learning of such perceived difficult topics. Out of a total of 468 students who took part in the survey, 291 students responded to this item. Students’ reasons are shown in Figure 2.

The figure shows that times again some students (13.1%) indicated that teachers should use practical examples in their lessons. The figure further shows that some students thought more explanations (11%) and frequent exercises (9%) on difficult topics would improve their learning.

Some students (8.9%) also stressed the need for teachers not to rush through the topics in their bid to complete the syllabus. Other measures suggested by students were: organization of extra classes for weak students, motivation of students by teachers, erasing the wrong perception about some topics, special attention to weak students by teachers and teachers being regular and punctual to class.

Less than 2% of the students indicated an adoption of new ways of teaching and improvement in teachers' and students' attitude towards the subject

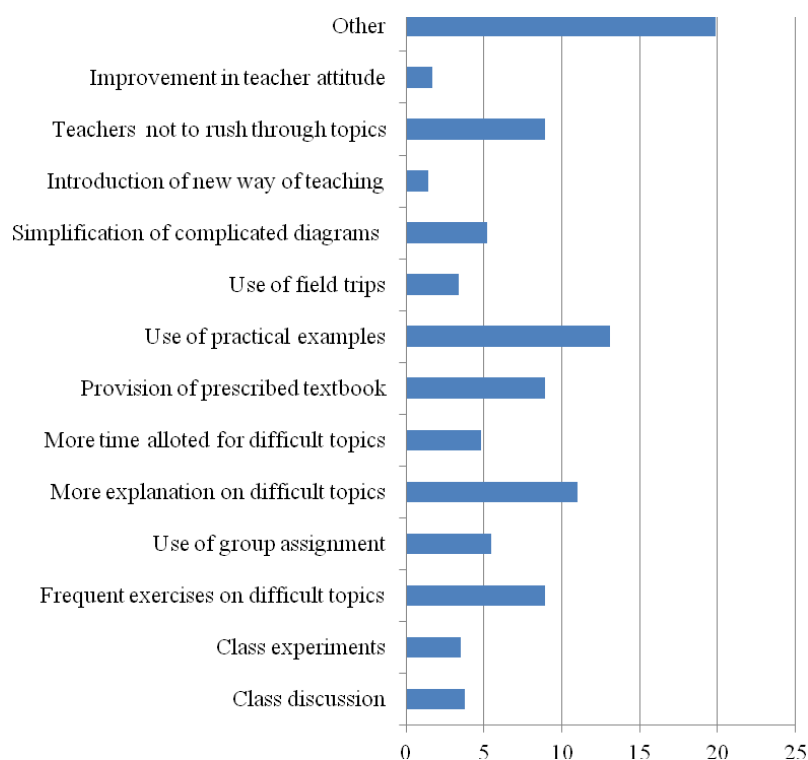


Figure 2: **Students' Responses on Measures to Improve the Learning of Perceived Difficult Topics in SHS Economics Syllabus**

Some of the measures stated by students in Figure 2 surfaced in the focus group interview with students and students gave further explanation on some of the measures they indicated in the survey. Students who took part in the focus group interview put premium on the need for economics teachers to use more practical situations to explain some of the difficult concepts.

Teachers must use some of the student to set an example so that the students can remember the things he or she has taught easily. The teacher must also use some current issues in the country to explain some of the concepts we find difficult to learn (Student A, School X).

Ziegert (2002); McGoldrick (2002) and Bergstrom (2009) have found that learning is enhanced when students get real-world and hands-on experience in applying and understanding economics issues. For example, when a teacher is introducing concepts “demand and supply” he/she could create a market in the classroom by asking students to bring some items to class. Students could act as sellers and buyers. As buying and selling take place, the prices and quantities demanded and supplied could be used to derive the demand and supply curves and subsequently the laws of demand and supply.

The students also reiterated that the use of practical examples could be facilitated through the use of group assignments, class discussions and experiments, educational trips and inviting resource persons to reinforce the teaching of particular concepts such as National income, International trade and Taxation.

Students also shared their thoughts on how some positive changes in the attitude of their teachers could enhance the learning of some perceived difficult topics. They stressed adequate teacher preparation on difficult topics, and spending more time to explain difficult concepts to students. Students expressed dislike to writing notes dictated to them and saw this as time-consuming and prevented detailed explanation of concepts. This is how a student recounted on dictation of notes:

Teachers should give less bulky and incomprehensible notes and rather give notes that summarize but give the key point; simply they should do more explanation and not dictating of notes
(Student B, School X).

Dictation of notes has been found to be dominant in most senior high school teaching in Ghana and had been noted to be one of the contributing factors to students' difficulties with some topics in economics (Dare, 1995; Yidana, 2007). This means that teachers should rather give more explanations and key points to students.

Provision of a standard textbook for the study of senior high school economics attracted a lot of comments from students. Students were of the view that if the Government could select good and experienced economics tutors to come up with a textbook, it would lessen their difficulties with some of the topics. According to the students, provision of a prescribed textbook as in the case of science by the Ghana Association of Science Teachers (GAST) for science students will prevent dictation of notes, and offer both teachers and students more time to have discussion of topics.

Teachers were also asked to respond to six items (38 to 43) on measures to overcome their difficulties in teaching some economics topics. The six items were based on some reported measures in the literature (Dare 1995; Becker & Watts, 2001; Maxwell, Mergendoller & Bellisimo, 2005; Leet & Houser, 2003) that could be used to improve the teaching of economics. Teachers' responses are presented in Table 13.

Table 13: Teachers' Responses on Measures to Overcome Teachers' Difficulties with Topics in SHS Economics Syllabus

Measures	SA	A	NS	D	SD	Mean	SD
1. Provision of textbooks	50.0	43.8	6.3	0	0	4.43	0.6
2. Frequent use of field trips in teaching	28.1	56.3	9.4	6.3	0	4.06	0.8
3. Frequent use of discussion method	40.6	50.0	9.4	0	0	4.31	0.6
4. Use of class experiments	28.1	50.0	12.5	9.4	0	3.96	0.8
5. Use of resource persons in teaching some topics	34.4	43.8	9.4	12.5	0	4.00	0.9
6. Use of debates in class	25.0	53.1	12.5	9.3	0	3.93	0.8

SA-Strongly Agree, A-Agree, NS-Not Sure, D-Disagree,

SD-Strongly Disagree,

Results in Table 13 show that majority of teachers 93.8% (M=4.43, SD=0.6) supported the fact that provision of textbook for senior high school economics will improve their teaching of perceived difficult topics. Over 90% of teachers were also in support of frequent use of practical examples to overcome difficulties with some of the topics. More than 80% of the teachers with means more than 3.00 agreed that frequent use of discussions coupled with class experiments in class will promote effective teaching of topics they find difficult to teach. This resonates with Bergstrom (2009) outlined practical experiments where he used opening a restaurant to teach the concepts: Fixed Cost, Total Cost, Variable Cost and Marginal Cost to economics students in USA.

The use of debates had over 10% of the teachers who were not sure and 9.3% who disagreed to its ineffectiveness in the classroom, however, more than 70% of the teacher favoured the use of debates to ease the teaching of perceived difficult topics. The overloaded syllabus coupled with limited time on the academic calendar for senior high schools would limit the use of debates in economics class.

Teachers were further asked to indicate other measures that could improve the teaching of difficult topics. Less than half of the teachers suggested some measures such as the provision of standard textbooks, provision of internet facilities in the schools to enhance research on search topics, and the formation of Economics Teachers Association to offer in-service training for teachers.

Individual interview with the selected teachers produced insightful suggestions that could improve the teaching of such topics. Three of the four

teachers interviewed stressed on the need to push some of the perceived difficult topics to the tertiary level to ease the difficulties for teachers as one teacher puts:

I will suggest that topics like consumer behaviour and national income be taught at the tertiary level because the whole concept is complex and technical... when you are teaching and you are not good enough there are some areas you will fumble with (Teacher A, School X).

This teacher complained about methods used by lecturers in the universities to teach such topics which affected his understanding of such topics. Hence, making teaching of such topics a problem. The teachers went further to indicate the need to teach some basic economics concept at the JHS level to enable students to have some knowledge about economics prior to their admission into SHS.

All the teachers felt that regular in-service training for economics teachers could solve most of the difficulties teachers find with some of the topics. One of them stated that had it not been a senior colleague teacher who helped him to have an easy way of teaching certain topics he would still be having problems with such topics. This was his remarks:

Government should not conclude that all teachers who study economics in the university can teach economics and therefore must be posted to schools. Some teachers know the content but do not know the methodology.

Teachers must be given in service training before they are employed (Teacher B, School Y).

In-service training, according to the teacher could be organized easily for newly posted teachers if there was an Economics Teachers Association. He noted that the association could organize training workshops drawing on experienced teachers and other resource persons to show how to teach difficult topics in the syllabus. Such workshops could help teachers to overcome their difficulties with some of the topics.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this concluding chapter, overview of the research problem and methodology, and the key findings of the study are presented as well as the recommendations and suggestions for future research are pointed out.

Summary

The problem that prompted this study was senior high school economics students' poor performance in economics in WAEC's organized examinations in Ghana. Some factors had been suggested for students' poor performance in economics lessons such as learning styles, environmental factors, students' study time among others (Walstad, 2002). One factor which could also contribute to low performance of economics students but has not been given much attention in economic education research is topics that students find difficult in learning. The WAEC Chief Examiner' Reports (2003-2006) indicate that some senior high school economics topics pose difficulties to students.

Evidence from economic education literature indicates that economics teachers have some difficulties with some topics in economics (Dorman, 2002; Guerrien, 2002). These reports raise questions about what economics topics do students perceive to be difficult. This study was therefore carried out to find out whether students' difficulties are as a result of teachers' inability to teach

those topics effectively or students for one reason or the other are unable to learn those topics or both.

To accomplish this, a mixed method design was used. Senior high schools that offered economics in Central Region were categorized into high and low performing schools based on individual performance in WAEC examinations. Economics students in two classes were randomly selected in schools since schools had more than two economics classes with one class which offered economics with elective mathematics and one class that offered economics without elective mathematics. This was done after three schools each had been randomly selected from the two school categories. Economics teachers in the selected schools automatically formed part of the survey. Two questionnaires (ESQ and ETQ) were developed and administered to economics students and teachers respectively in high and low performing schools to find out their perceived difficulties with topics in the senior high school syllabus.

Reasons for students' and teachers' difficulties with topics and measures to improve on the learning and teaching of the perceived topics were further probed into through focus group interviews with two groups of students in the two school categories and one on one interview with two teachers each in the two school categories.

Key Findings

1. It was found in this study that senior high school economics students in both low and high performing schools perceived some major topics in the economics syllabus as difficult. These major topics were: Price theory (Demand), Market structures, Theory of

consumer behaviour, National income accounting, and International trade. Students in both low and high performing schools also perceived some sub-topics as being difficult to learn: National income determination, the Multiplier concept and measurement data and Substitution and income effect.

2. The study revealed that teachers also perceived some topics in the economics syllabus difficult to teach. These were: National income accounting, National income determination, The multiplier concept and measurement, and Substitution and income effect. The study further revealed that all topics teachers had difficulties with were part of topics students also perceived to be difficult to learn.
3. The study found significance difference ($P < 0.001$, $t = 9.03$, $df = 466$) between male ($M = 3.15$, $SD = 0.63$) and female ($M = 2.62$, $SD = 0.62$) economics students' difficulties with topics in the syllabus.
4. The study also found out that there was significance difference ($P < 0.001$, $t = 6.77$, $df = 466$) with regards to difficulties with topics between students who offered economics with mathematics ($M = 3.16$, $SD = 0.6$) and students who offered economics without mathematics ($M = 2.76$, $SD = 0.7$).
5. It was found in this study that students gave varied reasons for their difficulties with some of the topics. The reasons were: topics were full of mathematics and diagrams; bulky content; lack of prescribed textbooks and other teaching and learning materials; teachers rushed through topics; full of theories and assumptions; poor

teacher attitude etc. teachers attributed their difficulties with some of the topics to poor mathematics background of teachers; poor background of some students in economics; lack of prescribed textbooks; insufficient training at the university etc.

6. The study revealed some measures students suggested to improve the teaching and learning of topics. Some of the measures were: provision of prescribed textbooks for economics; frequent use of practical examples and discussion in class, embarking on educational trips; more time allotted for difficult topics; introduction of new ways of teaching, teachers should not rush through topics etc. Teachers indicated measures such as provision of textbooks for senior economics students; use of resource persons in teaching; formation of Economics Teachers Association in Ghana to address issues affecting the teaching and learning of economics; in-service training for newly posted teachers and other teachers among others to improve the teaching and learning of perceived topics in the senior high school economics syllabus.

Conclusions

It can be concluded from the results of the study that economics students in senior high schools and their teachers perceived topics like “Substitution and income effect”, “National accounting” and “National Income determination” and “Multiplier concept and measurement data” as being difficult to learn and teach respectively. These topics are part of the topics the WAEC Chief Examiners’ Reports (2004-2007) indicating as posing difficulties to senior high school economics students, hence this study has

brought to light actual topics in the syllabus students find difficult and what reasons accounted for such difficulties.

There was a significance difference between male and female economics students' difficulties with topics in the syllabus. This suggests that gender has an influence in the learning of economics. Also, there was a significance difference in difficulties with topics between students who offered economics with mathematics and students who offered economics without mathematics. The implication of this is that mathematics ability has an effect on the learning of economics.

Students and teachers gave varied reasons that accounted for their difficulties with some topics in the economics syllabus. Some of the reasons that students gave were almost similar to some the reasons that teachers that accounted for their difficulties. This seems to suggest that students' difficulties with topics could partly be attributed to some difficulties economics teachers have with some of the topics in the syllabus.

Some of the measures that students and teachers suggested to improve on the teaching and learning of the topics have been reported in the economics syllabus and some literature, however, the study could not find out whether teachers are using these methods.

This study has unearthed lack of prescribed standard textbooks for senior economics students as one of the reasons both teachers and students find difficulties with some economics topics. The study has also revealed topics senior high school economics teachers find difficult to teach and reasons for their difficulties which was a gap in search of literature on topics teachers find difficult to teach. One important measure also came up in this

study and that is the formation of Economics Teachers Association to address problems in teaching and learning of economics.

Recommendations

The following recommendations are offered based on the findings of the study.

1. The Ghana Education Service should consider the introduction of some economics concepts in the Junior High School curriculum for students to have some basic economics concepts before Senior High School.
2. Universities should improve Lecturers methodology for training teachers for the Senior High Schools
3. Teachers should teach students offering economics relevant mathematics topics to enable them understand the mathematics in economics.
4. Guidance coordinators should counsel students before choosing economics especially students who have a phobia for mathematics.

Suggestions for Future Research

1. It is suggested that a study is carried out to assess the training of economics teachers in the universities and what the teachers do in the classroom after training.
2. It is also suggested that a study is carried out to find which mathematics topics are relevant for economics students.

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APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

FACULTY OF EDUCATION

DEPARTMENT OF ARTS AND SOCIAL SCIENCES EDUCATION

ECONOMICS STUDENTS' QUESTIONNAIRE

This questionnaire aims at finding out difficulties students have with senior high school economics topics. This exercise is purely academic and therefore your response to the items will be treated with utmost confidentiality, therefore do not write your name on the paper. You are kindly requested to answer as frankly as you can. Thank you for your cooperation.

SECTION A: BACKGROUND OF STUDENTS

Please tick (✓) the appropriate response

1. Programme: Business [] General Arts [] Home
Economics []
2. Form.....
3. Sex: Male [] Female []
4. Age.....
5. Do you offer Elective Mathematics Yes [] No []

SECTION B: STUDENTS PERCEIVED DIFFICULTIES OF ECONOMICS

TOPICS

Tick (√) the appropriate response to how easy or difficult you find the following main topics and their sub topics to learn.

Main topic and Sub topic	Very Easy to understand	Easy to understand	Understand partially	Difficult to understand	Very difficult to understand	Not Taught
6.Fundamental Concepts in Economics						
6(a). Scarcity, Choice, Scale of preference, opportunity cost, definition of economics						
6(b) Scope of Economic activity						
6(c) Tools of Economic Analysis						
7.Factors of Production						
7(a) Land, Labour, Capital and Entrepreneurship						
8. Population						

Main topic and Sub topic	Very Easy to understand	Easy to understand	Understand partially	Difficult to understand	Very difficult to understand	Not Taught
8. Population						
9. Economic systems						
10. Unemployment						
11. Price Theory (Demand)						
11(a) Concept of Demand and Types of Demand						
11(b) Concept and Types of Elasticity of Demand						
12.(a) Concept of supply and types of supply						
12(b) Concept of Elasticity of Supply and its importance						
12(c) Concept of an Equilibrium Price (Price Determination)						
12(d) Algebraic Equations of Demand and Supply						

Main topic and Sub topic	Very Easy to understand	Easy to understand	Understand partially	Difficult to understand	Very difficult to understand	Not Taught
12(e) Price Controls (Price Regulations)						
13.Theory of Production						
13(a) Time Periods in Production; Returns to an Input						
13(b) Long Run Production Theory						
14. Location and Localization of Industries						
15.Specialization and Division of Labour						
16. Cost and Revenue Concepts in Production						
17.Economies and Diseconomies of Scale						
18.Market Structures						
19. Distributive Trade						

Main topic and Sub topic	Very Easy to understand	Easy to understand	Understand partially	Difficult to understand	Very difficult to understand	Not Taught
20(a) Utility Concepts and the Law of Diminishing Marginal Utility						
20(b) Concepts of an Equilibrium of a consumer						
20(c) Substitution and Income Effects						
21. National Income Accounting						
21(a) National Income Determination						
22. Concept of Economic Growth and Economic Development						
23. Agriculture and Industry						
24. Money						
24(a) Characteristics and Functions of Money						

Main topic and Sub topic	Very Easy to understand	Easy to understand	Understand partially	Difficult to understand	Very difficult to understand	Not Taught
24(b) Supply and Demand for Money						
24(c) The Value of Money						
25. Financial and Banking institutions						
26. Inflation						
27. Public Finance						
27(a) Government Activities and Expenditure						
27(b) Public/Government Revenue						
27(c) Taxation						
28. International Trade						
29. Economic Development						
30. Economic Cooperation						
31. Economic Development Planning						

SECTION C: REASONS FOR STUDENTS DIFFICULTIES WITH TOPICS

What reasons account for your difficulty in understanding those topics you indicated as being difficult or very difficult to understand?

Reasons	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
32. Full of mathematics and diagrams					
33. Abstract and boring to read					
34. Bulky content					
35. Lack of textbooks and other teaching and learning materials					

36. What other reason (s) account for your difficulties with the topics you have indicated as “difficult or very difficult to understand”?

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APPENDIX B
UNIVERSITY OF CAPE COAST
FACULTY OF EDUCATION
DEPARTMENT OF ARTS AND SOCIAL SCIENCES EDUCATION
ECONOMICS TEACHERS' QUESTIONNAIRE

This questionnaire aims at finding out difficulties economics teachers have with senior high school economics topics. This exercise is purely academic and therefore your response to the items will be treated with utmost confidentiality. You are kindly requested to answer as frankly as you can. Thank you for your cooperation.

SECTION A: BACKGROUND OF TEACHERS

Please tick the appropriate response

1. Sex: Male [] Female []
2. Please tick your age range: 20-30 [] 31-40 [] 41-50 []
51and above []
3. What is your highest academic qualification in economics?
'A' Level [] Bachelor's Degree [] Master's Degree [] PhD []
Others Specify.....
4. What is your highest professional qualification as a teacher?
Cert 'A' [] BEd [] MEd [] Others Specify.....
5. Years of teaching economics at senior high school
Below 5 years [] 5-10 years [] 11-20 years []
20 years and above []

SECTION B: TEACHERS' PERCEIVED DIFFICULTIES WITH ECONOMICS TOPICS

Tick the appropriate response to how easy or difficult you find the following main topics and sub topics to teach.

Main topic and Sub topic	Very easy to teach	Easy to teach	Partially difficult to teach	Difficult to teach	Very difficult to teach	Not Taught
6.Fundamental Concepts in Economics						
6(a) Scarcity, Choice, Scale of preference, opportunity cost, definition of economics						
6(b) Scope of Economic activity						
6(c) Tools of Economic Analysis						
7.Factors of Production						
7(a) Land, Labour, Capital and Entrepreneurship						
Main topic and Sub topic						
8. Population						
9. Economic systems						
10. Unemployment						

	Very easy to teach	Easy to teach	Partially difficult to teach	Difficult to teach	Very difficult to teach	Not Taught
11. Price Theory (Demand)						
11(a) Concept of Demand and Types of Demand						
11(b) Concept and Types of Elasticity of Demand						
12. Price Theory (Supply)						
12(a) Concept of Supply and Types of Supply						
12(b) Concept of Elasticity of Supply and its importance						

Main topic and Sub topic	Very easy to teach	Easy to teach	Partially difficult to teach	Difficult to teach	Very difficult to teach	Not Taught
12(c) Concept of an Equilibrium Price (Price Determination)						
12(d) Algebraic Equations of Demand and Supply						
12(f) Price Controls (Price Regulations)						
13.The Theory of Production						
13(a) Time Periods in Production; Returns to an Input						
13(b) Long Run Production Theory						
14. Location and Localization of Industries						
15. Specialization and Division of Labour						
16. Cost and Revenue Concepts in Production						

Main topic and Sub topic	Very easy to teach	Easy to teach	Partially difficult to teach	Difficult to teach	Very difficult to teach	Not Taught
17. Economies and Diseconomies of Scale						
18. Market Structures						
18(a) Concepts of an Equilibrium of a Firm and of an Industry						
19. Distributive Trade						
20. Theory of Consumer Behaviour						
20(a) Utility Concepts and the Law of Diminishing Marginal Utility						
20(b) Concepts of an Equilibrium of a consumer						
20(c) Substitution and Income Effects						
21. The National Income Accounting						

Main topic and Sub topic	Very easy to teach	Easy to teach	Partially difficult to teach	Difficult to teach	Very difficult to teach	Not Taught
21(a) National Income Determination						
21(b) The Multiplier Concept and Measurement Data						
22. Concept of Economic Growth and Economic Development						
23. Agriculture and Industry						
24. Money						
24 (a) Characteristics and Functions of Money						
24(b) Supply and Demand for Money						
24(c) The value of Money						
25. Financial and Banking Institutions						
26. Inflation						
27. Public Finance						

Main topic and Sub topic	Very easy to teach	Easy to teach	Partially difficult to teach	Difficult to teach	Very difficult to teach	Not Taught
27(a)Government Activities and Expenditure						
27(b) Public/Government Revenue						
27(c) Taxation						
28. International Trade						
29. Economic Development						
30. Economic Cooperation						
31. Economic Development Planning						

SECTION C: REASONS FOR TEACHERS' DIFFICULTIES WITH ECONOMICS TOPICS

What reasons account for the difficulty you face in teaching those topics you find difficult to teach?

Reasons	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
32.Lack of teaching learning materials					
33. lack of simplified and suitable textbooks					

Reasons	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
34. abstract nature of some topics					
35.some of the topics full of mathematics and diagrams					
36. some students have poor mathematical background					

37. What other reason (s) account for your difficulties with the topics you have indicated as difficult to teach?

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SECTION D: MEASURE TO ENHANCE STUDENTS' LEARNING OF DIFFICULT TOPICS

What are the intervention measures you think can help you enhance the effective teaching of the topics you find difficult to teach?

Intervention Measures	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
38.Provision of textbooks					

Intervention Measures	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
39.frequent use of field trips in teaching some topics					
40.Frequent use of Discussion method					
41.Use of Class experiments					
42. Use of resource persons in teaching some topics					
43. Use of debates in class					

44. What other measure (s) would suggest to improve on your teaching of the difficult topics you face in economics?

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APPENDIX C

Semi-Structured Interview Protocol used to Interview Economics

Teachers

- Q1 What can you say about mathematics and diagrams in some topics that pose difficulties to some teachers?
- Q2 Do you think assumptions and theories in some of the topics pose difficulties to teachers?
- Q3 In what way does lack of prescribed textbooks contribute to teachers' difficulties with some topics in economics?
- Q4 Does teachers' background in mathematics contribute to the difficulties in delivering lessons on the perceived difficult topics?
- Q5 Do you think teachers training in the university also contribute to difficulties in teaching some topics in economics?
- Q6 How can the issue of lack of prescribed textbook for economics be solved?
- Q7 How do you make the teaching of economics more practical?
- Q8 Could you suggest any other measure that could improve the teaching and learning of prescribe difficult topics in senior high school economics?

APPENDIX D

Focus Group Interview for Interviewing Economics Students

Name of school..... School Type.....

Date..... Time.....

- Q1 Topics like demand and supply, consumer behaviour, cost and revenue concepts, market structures, international trade were indicated as being difficult to learn, what makes them difficult to learn?
- Q2 Why do you think mathematics and diagrams contribute to students' difficulties with some economics topics?
- Q3 Could you explain why you think assumptions, theories and lack of practical examples contribute to your difficulties with some of the topics?
- Q4 Could you explain why you think lack of prescribed economics textbooks contribute to your difficulties with some of the topics?
- Q5 Could you explain why you think teachers do not make the teaching of economics practical?
- Q6 Suggest other ways of improving the teaching and learning of economics in senior high schools.