


**RELEVANCE OF AGRICULTURAL EDUCATION IN THE
SECOND CYCLE LEVEL OF EDUCATION IN THE GREATER
ACCRA REGION**

BY

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**THIS DISSERTATION IS SUBMITTED TO THE
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DECLARATION

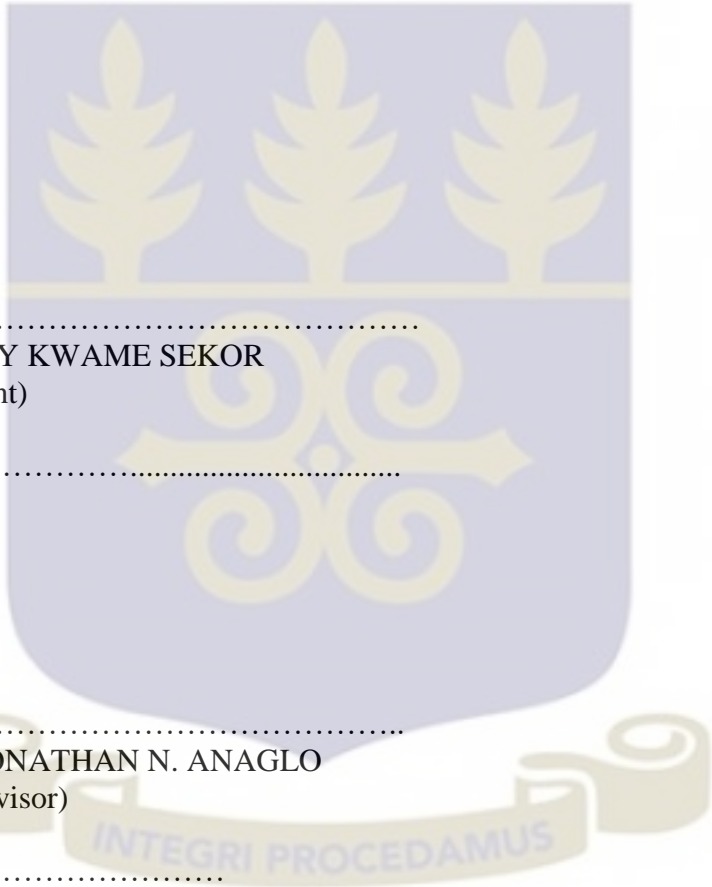
I, Henry Kwame Sekor do hereby declare that, except for the references made to other people's work which have been duly cited, this dissertation, titled, 'Relevance of Agricultural Education in the Second Cycle Level of Education in the Greater Accra Region' is the result of my own research. I hereby declare that this thesis has neither been presented in whole or in part for the award of another degree in this university or elsewhere.

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ABSTRACT

Though it is government policy to modernize the agricultural sector and make it a catalyst for rural transformation making Ghana an agro-industrialized country, very few students pursue agricultural programme as compared to other programmes at the SHS level. These students who pursue the agricultural programme do not match up to the standard in terms of skill acquisition to meet the job market hence tend to be 'job seekers' and end up in other sectors. The main objective of the study was to find out factors that influence the choice of agricultural program at SHS level and the extent to which teaching and learning material or resources influence agricultural skill development. The study employed the survey design, using quantitative analysis. A sample size of 340 was used comprising of 310 students, 15 guidance and counselling coordinator as well as 15 heads of agricultural science department. Questionnaire was the main data collection instrument used. The analysis included tabulation and computation of chi-square test, frequencies and percentages. The study revealed that School Guidance and Counselling (SGC) services provided significantly influenced students' choice of agricultural program at the SHS level. The study also identified other factors which significantly influenced students' choice of agricultural program at this level, which include job market, people in the agro-business, BECE result and using the program as a stepping stone. The study further revealed the significance of teaching and learning material or resources in the development of agricultural skills by students. Based on this findings, it has been recommended that, guidance and counselling should be made effective at the JHS level so as to get pupil informed about what pertain at the SHS level especially career choice, more SHS should be encouraged to add agricultural program to their already run program and adequate teaching materials should be provided to enable students develop the requisite skills to meet the job market or even become self-employed.

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DEDICATION

This work is dedicated to my late mother Mrs Martha Kom for supporting my education.



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LIST OF ABBREVIATION

AET	-	Agricultural Education and Training
BECE	-	Basic Education Certificate Examination
CERSGIS	-	Centre for Remote Sensing and Geographic Information Services
CRDD	-	Curriculum Research and Development Division
CSSPS	-	Computerised School Selecting and Placement System
EMSTAC	-	Elementary and Middle Schools Technical Assistance Centre
EWSC	-	European Working Conditions Surveys
FCUBE	-	Free Compulsory Universal Basic Education
GCE 'A'	-	General Certificate Examination Advance Level
GCE 'O'	-	General Certificate Examination Advance Level
GDP	-	Gross Domestic Product
GES	-	Ghana Education Service
GoG	-	Government of Ghana
HoDs	-	Head of Departments
ICT	-	Information and Communication Technology
ISCED	-	International Standard Classification of Educations
JHS	-	Junior High School
MoE	-	Ministry of Education
MOFA	-	Ministry of Food and Agriculture
MSLC	-	Middle School Leaving Certificate
OECD	-	Organisation for Economic Co-operation and Development
SCCT	-	Social Cognitive Career Theory
SHS	-	Senior High School
SGC	-	School Guidance and Counselling
SPSS	-	Statistical Package for Social Science
TEAP	-	Total Extracurricular Activity Participation
TLMs	-	Teaching and learning Material
TWA	-	Theory of Work Adjustment
UNESCO	-	United Nations Educational, Scientific, and Cultural Organization

- WAEC - West African Examination Council
WASSCE - West African Senior School Certificate Examination



CHAPTER ONE

AGRICULTURAL EDUCATION

1.0 Introduction

The chapter explains the background of the study, research problem, research questions research objectives, the hypothesis to be tested, relevance of the study, the scope of it, where the study was conducted, the map of the study area and how the report has been organised.

1.1 Background

Education is the basic building block of every society. It is a fundamental human right, not a privilege of the few. It is no coincidence that parents around the world demand education for their children as their first priority. Children themselves yearn for the opportunity to fulfil their dreams. They want to be nurses, teachers, musicians, mathematicians, painters and farmers. Education is the gateway to learning the skills and values necessary to fulfil those aspirations.

In our knowledge-based world, education is the single best investment countries can make towards building prosperous, healthy and equitable societies. It unleashes the optimal potential in people, improving individual livelihoods and those of future generations. If all students in low-income countries acquired basic reading skills, 171 million people could be lifted out of poverty, equivalent to a 12% cut in world poverty

(Ban Ki-Moon, 2012). Yet a good education is more than an entry point into the job market. Education has the power to transform people and bring shared values to life.

Education is a concept that may be defined differently, therefore, may defy precise definition. No doubt the concept of education has been viewed from various disciplinary perspectives. To the social scientist, education is seen as the process of preparing the individual to adjust to varying situations of interacting with other members of the society in exchange of good and services, allocation of scarce resources and wise use of potentials in the society he or she find himself or herself (Egun, 2009). On the other hand, the scientist sees education as the process of preparing an individual to be able to interpret his environment rationally and be able to adjust and adapt to technological and scientific changes in finding solutions to society's problems in an ever changing environment. To the teacher, education is a process of bringing a new societal recruit to embrace the social decorum and practices in the society for self enhancement.

It is in this perspective that Igborgbor (2000) operationally described education as the acquisition of needed competencies for life in the society. He concluded that such competencies should spread through the cognitive, affective and psychomotor domains. It is also for a fact that, education prepares the individual for tomorrow's living and ultimate survival (Kumar and Ahmad, 2008). This need for continuous survival and ability to adapt to changes that have remained a permanent feature of human society that has pushed man into those activities that will enable him adjust to unexpected changes in his environment.

Rena (2005) views, education as the deliberate and systematic influence, exerted by the mature person upon immature through instruction, discipline and harmonious development of physical, intellectual, aesthetic, social and spiritual powers of the human being according to individual and societal needs, and directed towards the union of the educant with his creator at the final end. According to Aboagye (1997), education aimed at socialising the child by the adult to acquire the culturally desirable and appropriate behaviours, goals, motives and skills for his or her future role in the society. The UNESCO International Standard Classification of Education defines education as comprising organised and sustained communication designed to bring about learning (ISCED, 1997).

Education has been defined as the process through which knowledge, skills, attitudes and values are imparted for the purpose of integrating the individual in a given society, or changing the values and norms of a society. For an individual, this process is life-long. In agriculture, education is a key determinant factor in technology adoption and education levels are highly correlated with technology adoption rates. A large body of prior research has shown that highly educated workers tend to adopt new technologies faster than those with less education (Lleras-Muney and Lichtenberg, 2005), as education and information reduce adoption costs and uncertainty associated with a new technology. This in turn increases agricultural productivity, incomes and improved livelihoods (Olwande, Sikei and Mathenge, 2009; Uaieane, Arndt and Masters, 2009).

Agriculture undoubtedly has been one of the propelling factors of human civilisation and development. The term agriculture has been described in many ways which

include; the science or the practice of cultivating plants, animals and other life forms for the utilization of food and other products by humans to sustain life, it is the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products (<http://www.merriam-webster.com/dictionary/agriculture>). Rubenstein (2003) put it as a deliberate effort to modify a portion of earth's surface through the cultivation of crops and the raising of livestock for sustenance or economic gain. It has also been described as the systematic raising of useful plants and livestock under the management of man (Rimando, 2004).

In an era of science and technology, employment in agriculture provides lower wages than many other professions; as a result, many countries are less attentive providing predilection policy formulation of agriculture and agricultural education (Gazi et al., 2009). Many developed and mid-developed countries have resorted to alternative industries for employment forcing developing countries to depend on agriculture fundamentally with a continuous decline to the share of GDP (Gazi et al., 2009).

The countries that are unable to arrange alternative forms of employment need to depend on agriculture even though income potential is unsatisfactory and sluggish. Nevertheless, either some countries or a portion of the population must be involved in agriculture in order to ensure food supply for the population (Arcand, 2000). Therefore, stopping agriculture industry is not a resolution; rather it is now thus important to discover the ways that can ensure more productivity of the sector with the investment of less time limited human resources (Alam, 2008). Outstanding researches in the area

of agriculture and the employment of well-trained human resources can provide substantial productivity (Ashley and Maxwell, 2001). This will only be possible if a well-timed agricultural education is delivered targeting different groups and levels with a decent collaboration of education, training and agricultural policy of a country.

Agricultural education in most countries of which Ghana is no exception, are managed by different ministries (Ministry of Education, Agriculture, Science & Technology and Industry). Osborne (2011) explained agricultural education as a single, broad social and behavioural science discipline that includes teaching and learning in formal and non-formal settings; reaching widely varied target audiences through interpersonal, group, and mass communications; and strengthening the leadership capacity and effectiveness of individuals and organizations. Agriculture education and training is concerned with all types of 'formal', 'non-formal' and 'informal' modes in which agricultural knowledge and skills are exchanged for the purpose of learning (Maguire, 2001). It seeks to bring together a fusion of what happens in the different policy sectors of 'agriculture' and 'education' (Kassa, 2004).

Education in agriculture is designed to provide students with competencies to make them aware of and prepare for the world of work. By explanation Agriculture Education is an applied discipline concerned with the preparation of agricultural workers including farmers, teachers of agriculture, extension staffs, researchers, agribusiness practitioners etc., to satisfy individual, community and national needs in the field of agriculture and agribusiness (Vandenbosch, 2006). It is important to note that agriculture education must be viewed as a continuum of learning from primary through

secondary and higher education to continuing adult education both in the formal and non-formal sectors.

Agricultural Education has a long traditional history of preparing students who continue their education in agriculture at the tertiary level (Maguire, 2002). The program concentrates on the development of essential technical skills that are vital to the success of people entering a career in agriculture. Just as important as the technical skills are the skills developed in leadership through the comprehensive nature of the program. Agricultural Education has trained youth in the skills necessary to assume leadership positions in agriculture (Ivanitskaya, Clark, Montgomery and Primeau, 2002). As Agricultural Education addresses controversial issues such as genetic engineering, leadership training takes on increasing importance among the youth (Boix-Mansilla, Miller and Gardener, 2002; Grossman, Wineburg and Beers, 2000). People will be needed who not only have an understanding of the technical aspects of issues, but also have an understanding of the ethical philosophical issues.

The importance of Agricultural education in Ghana cannot be over-emphasised due to the fact that agriculture is and will remain for a long time the mainstay of Ghana's economy. Furthermore, sustained food production in any society is a basic requirement. In recent times production and export of both traditional and non-traditional agricultural produce is being encouraged as a means of generating income with the view of raising the standard of living of the people. Currently, majority of Ghanaians is engaged in farming as a means of livelihood and it is essential that agriculture is taught as part of general education at all levels of pre-tertiary education.

1.2 Research Problem

Agricultural education is an essential tool for development, but the discipline is faced with challenges. These challenges include poor practical skills, poor funding, weak connection with other parts of the agricultural education system- colleges, vocational schools, farmer training networks and failure to attract the best quality students from the secondary schools. Furthermore, teaching and research staff are frequently graduates of the same university or college thereby excluding the entry of new ideas from the wider world of academia and research. There is also high unemployment of graduates from the university. Maguire (2000) noted that ‘with so many aspects of development, agricultural education in Africa (and elsewhere) faces rapid and often perplexing changes in the environments in which it exists’. While efforts have been made in sub-Saharan Africa to give the needed support to agricultural education as part of the overall education development program, much remains to be done to enable the discipline respond adequately to the new and emerging challenges in the agricultural sector.

Demographic factors such as sex, religion, cultural background and the influence of parents are necessary for the proper selection of career options in the schools. Being male or female forms a major determinant of selection of agricultural science in our schools. There is the gender stereotype with the general perception that agriculture is meant for men and not women (Marietta, 2009). Asimeng-Boahene (2006) also observed that gender stereotypes can also limit girls’ performance in science related subjects of which agriculture is one.

Parents have a lot of influence on their children when it comes to subject selection in schools. Most parents dictate what courses their children should offer and most often

they prefer courses such as Medicine, Law and Business Administration. Some authors observed this phenomenon among parents, playing roles in career choices of their children (Taylor, Harris and Taylor, 2004; Navin, 2009). Thus demographic issues and parental influence have bearings on subject selections in the schools.

At basic level of education, agriculture is integrated into the curriculum where agricultural topics are included in the syllabus of natural studies and integrated science of lower and upper primary respectively. In the Junior High School (JHS), agriculture is a course studied and is examinable in Basic Education Certificate Examination conducted by West African Examination Council (CRDD, 2010). However, at the SHS level even though it is the government's policy to modernise the agricultural sector and make it a catalyst for rural transformation making Ghana an agro-industrialised country, the subject agriculture is rather offered in few SHS in the country. This has led to very few students offering the agricultural program at this level. The syllabus was designed to help students to appreciate the importance of agriculture in the socio-economic development, acquire decision-making skills through the scientific principles, develop knowledge, skills and attitudes for productive and profitable agriculture. It is also to be noted that many students who undertook the agricultural program and pursued general agriculture at the tertiary level tend to seek job at other sectors as reported by Okorley (2001).

Guidance and counselling services form part of secondary school education and in Ghana there are guidance and counselling coordinators attached to all second cycle schools. They are supposed to provide counselling to students concerning choice of program, subject combination as to future careers of the students. However, in most

cases, the services tend to be dwindling as the coordinators are subject teachers themselves. Hence, there is an inadequacy in the provision of the service to the extent that, the choice of program and career are left in the hands of students to do, who make choices that are not to their capability and strength. Many opt for areas where they will be comfortable with in terms of passing their West African Senior School Certificate Examination (WASSCE), regardless of their future career due to inadequate counselling.

Though the curriculum of second cycle education is programs optional, it is the duty of the guidance and counsellors to help students to make the right choices with regard to future careers. As pointed out by Schwartz (2004), choice is the outcome of process which involves assessment and judgement: that is, the evaluation of different options and making decision about which option to choose. That means there are other factors which can equally influence choice of a program. In this regard, extra curricula activities which are very important in total education of students could be looked at.

Some of the aims of agricultural education at basic and secondary educational level include acquisition of entrepreneurial skills in agricultural production, basic knowledge and skills in food production, skills in processing, preservation, storage and marketing of agricultural produce and decision-making skills through scientific principles. However, in most cases students coming out at these levels do not match up to the standards in terms of skill acquisition. This is because the instructional materials and resources available were grossly inadequate or were not properly used to the benefit of

the students. Even there are some schools which do not have land for agricultural practicals.

1.3 Research Questions

With regards to the few number of students who offers agricultural programme at the SHS level and their level of agricultural skill acquisition, the research sort to answer this general question: ‘Is career and guidance sessions and instructional material a motivating factor in the choice of agricultural programme at the SHS level leading to agricultural skill development?’

- i. To what extent do demographic factors influence the choice of agricultural program?
- ii. To what extent do career and guidance sessions influence the choice of agricultural programs at the SHS?
- iii. To what extent do teaching materials influence agricultural education and skill development by agricultural students at the SHS?

1.4 Research Objectives

The main objective of this research is to determine the extent to which career and guidance sessions and instructional materials influences the choice of agricultural programme at SHS level and agricultural skill development.

- i. To examine how demographic factors influence the choice of agricultural program.
- ii. To assess the relationship between guidance and counselling sessions and the choice of agricultural program at the SHS level.

- iii. To examine the relationship between ‘the use of teaching material on agricultural education’ and skill development by agricultural students at the SHS.

1.5 Relevance of the study

Agriculture plays a vital role in the economic growth of Ghana and its role in development is enormous. Recent data showed it as the second largest contributor to the GDP after service industry while it consumes a bigger portion of human resource and fund. There are those who argue that investing in agriculture is not an epoch-making decision for a developing country like Ghana due to the downward trend of its contribution to GDP. But this kind of argument is fairly tricky as; if the production of agricultural goods is being stopped what would happen to not only food supply for the population but also to the supply of raw materials used by major industries that provide a higher GDP. Though, currently the earning of GDP is significantly lower compared to the vast majority of populations employed at the agriculture sector.

There are many reasons for the low level of contribution of agricultural sector. These are mainly related to non-skilled workforce, use of low level and time-consuming technology, old fashioned cultivation that deserve a revolutionary change, the youth not considering taking up career in the sector due to improper career orientation, agricultural graduates turning to be job seekers and with the elites not joining.

In order to improve upon skilled workforce, bring about innovation into the sector, getting the youth taking career in the agricultural sector, turning agricultural graduates

into entrepreneurs, agricultural education should be the best option. Agricultural education is an essential tool for development, and one cannot doubt it being an essential factor in the success of agricultural development.

Agricultural education being an essential tool for development needs to train and bring on board skilled personnel, bring innovation and get the youth into the sector for they are the energetic workforce. It is thus in the right direction to look at what goes into agricultural education especially at the Senior High School level.

This research laid to bare factors that influence the choice of agricultural program at the SHS level. In the first place, the contribution of guidance and counselling sessions were looked at as to the extent to which it has influenced the choice of agricultural program at the SHS level. This is in line with how the youth are not willing to take up career in the agricultural sector and how guidance and counselling is organised to influence the choice of few students offering the program at this level. This is because guidance and counselling as introduced in schools have shown greater tendency of influencing students in many ways especially in career choice decision making.

This study also explored other factors that influence the choice of agricultural program at the SHS level apart from guidance and counselling. There are other factors that influence decision making. As pointed out by Hodkinson (2008), that the extent to which a person could influence his or her own career was strongly affected by their position in the field and the resources at their disposal. This research therefore, looked at resources and other factors that influenced the choice of agricultural program.

An important aspect of this research is to provide empirical evidence that teaching and learning materials or resources influence agricultural education and skill development. Thus, to a large extent determine the teaching and learning materials or resources that impacted greatly on students' skill development at this level. This is in line with skill development through agricultural education that will make agricultural graduates be more of entrepreneurs than to be 'job seekers'. Ultimately, this research will seek to add to the depth of knowledge of agricultural education to enable students develop interest in agricultural program and improve upon skill development in agriculture

1.6 Organisation of the Report

This thesis is organized as follows: Chapter one of this research starts with introduction where in the background the concept of education was looked at with some definitions. The chapter continue to look at agriculture education in Ghana and its prospect. This was followed by research questions, objectives, hypothesis and relevance of the study. Chapter two entails a review of the literature and the theoretical perspectives relevant to the choice of agricultural science program at SHS level and how agricultural education and training impact on development of agricultural skills. Chapter three describes the methodology of this research and considers the data collection processes and methods of analysis to answer the objectives. Chapter four presents the results and discussion of this study. The chapter provides the analytical description of school guidance and counselling services influence on the choice of agricultural science program at SHS level, other factors influencing students' choice of the program apart from SGC and the impact of teaching and learning resources influences and agricultural

skill development. The summary, conclusion and recommendations of this research are presented in chapter five.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed the relevant theoretical and empirical literature on agricultural education, choice of the Agricultural program at second cycle level and its relevance at the second cycle level with respect to skill development. The conceptual framework guiding the study was first looked at.

2.1 Theoretical perspectives

The Process of choice

Choice is the outcome of a process which involves assessment and judgement; that is, the evaluation of different options and making a decision about which option to choose (Schwartz, 2004; Kahneman, 2003; Gottfredson, 2002). In order for these processes to take place and a choice to be made, there need to be two or more alternatives from which to choose (Schwartz, 2004; Hastie and Dawes, 2001). K"oszegi (2006) argue that " these alternatives should have some positive value; in this sense a 'choice' between something which is definitely desired and something which is definitely not desired is not a true choice. The processes entailed in choice all involve cognition, and psychological theories concentrate on explaining how people make choices, in particular the cognitive processes that underlie choice (Bimrose, Brown and Barnes, 2008; Epstein, 1994).

Hastie and Dawes (2001) accessed that different people in different situations frequently think about decisions in the same way, reflecting the fact that human beings have a common set of cognitive skills. These cognitive skills and their limitations are also influential in constraining choices so that choice making in reality varies from what may be seen as ideal and logical.

2.2 Theories on choice

Theories regarding choice generally fall into two categories or put into two paradigms: normative theories of cognition and descriptive theories of cognition. Normative theories are concerned with how we should or ought to reason, make judgements and take decision. Theories falling into this category include formal logic, probability theory, and decision theory (Over, 2004; Edwards and Fasolo, 2001). Normative processes of decision explain how decision makers employ a particular set of alternatives to solve problems (Hoch, Kunreuther and Gunther, 2001).

Descriptive theories set out to describe how people actually think when making decisions and have empirical evidence to support them (Over, 2004; Edwards and Fasolo, 2001). Descriptive models use cognition to explain decision making, whereas normative theories consist of rationalistic components that indicate how decision makers should decide (Broder and Gaissmaier, 2007).

Decision and behaviour may be the core characteristics of decision-making phenomena. They involve the process of human thought and reaction about the external world, which include the past and possible future events and the psychological

consequences, to the decision maker, of those events (Weber & Johnson, 2009). Gigerenzer (2010) explain decision-making as one of the basic cognitive processes of human behaviours by which a preferred option or a course of actions is chosen from among a set of alternatives based on certain criteria. The essence of decision making seems to integrate both the beliefs about specific events and people's subjective reactions to those events (Weber & Johnson, 2009; Wang, 2008).

A number of authors have discussed the importance and influence of beliefs, values, and behaviour in the decision-making process (Menehetti and Seel, 2001; Hastie and Dawes, 2000). Choice is the outcome of a process which involves assessment and judgement; that is, the evaluation of different options and making a decision about which option to choose (Schwartz, 2004; Kahneman, 2003; Gottfredson, 2002). In order for these processes to take place and a choice to be made, there need to be two or more alternatives from which to choose (Schwartz, 2004; Hastie and Dawes, 2001). Choice of beliefs and action is not done in tandem and assume that an agent chooses beliefs in a strategic manner to resolve a trade-off between a standard instrumental payoff and some notion of psychologically based belief utility (K"oszegi, 2006).

2.2.1 Approach to Decision making and Choice of Career

People make choices after they have taken decisions. In taking those decisions, they go through one major process, thus information processing. Information processing approach to decision making can be traced back to Simon (1955). Payne and Bettman (2004) stated that information processing approach to decision making is notion of bounded rationality, that is, humans are 'bounded' by constraints in the environment (for example, information costs), and in the mind (for example, limited memory); these

constraints shape people's behaviour. This approach initially focused on cognitive aspects of decision-making, but recently it has expanded to include emotional and 'ease of justification' aspects of decision-making. The approach is based on the following assumptions:

- We are highly selective about what information we attend to and how it is used.
- Acquiring and processing information has cognitive and/or emotional costs.
- We use simplification mechanisms (heuristics) to select and process information: lots of different heuristics have been identified.
- Heuristics are chosen on the basis of the nature of the task problem.
- Beliefs and preferences are often constructed or generated through the process of decision-making, as opposed to individuals having known, well-defined preferences which they bring to a decision-making situation.

Information processing approach to decision making have several examples, but notable among them is adaptive decision-maker framework. This framework is concerned with how individuals choose between different courses of action, in particular, in choice situations where no single alternative is best on all attributes (Mata, Schooler and Rieskamp, 2007; Broder, 2003). These types of decisions are known as preferential choice problems. Preferential choice problems are generally solved through a process of information acquisition and evaluation about the alternatives and their attributes (Mata et al., 2007; Broder, 2003).

2.2.2 Factors Affecting Choice or Decision-making

Choice making has both cognitive and emotional components. At a general level, emotion and cognition are both types of information processing, but they have different functions. (Pessoa, 2008; Gray, Braver and Raichle 2002). Many theorists see emotion as alerting individuals to important features of a situation and providing direction for cognitive processes and behaviour (Loewenstein and Prelec, 2004; Lemerise and Arsenio, 2000). In relation to choice, people think about the options and the likely consequences of choosing an option, but in addition there are strong emotional factors in play. People have feelings about the decision and expectations about feelings that might result from choosing different options. Other schools of thought were that that emotions are particularly likely to play a role in conditions of uncertainty and incomplete knowledge which characterise many decisions, as they reduce information processing (Loewenstein and Prelec, 2004; Behara, 2004; Lemerise and Arsenio (2000).

It should be noted that apart from emotion and cognitive processes, 'affect' and 'mood' influence information processing, judgement and decision-making. Generally, 'affect' refers to traits which are pervasive and broad and have longer duration, such as good or bad feelings, 'emotions' are narrower and refer to particular states (for example, anger, fear, happiness). The term 'mood' refers to a feeling that is low in intensity but has no specific object (Fin cane, Peters and Slavic, 2003). Emotional processes are faster than cognitive processes, so if an individual is under increased pressure of time to make a choice, affect may have greater influence than cognitive processes (Swenson, 2003). However, mood also influences estimates of the outcome of a choice (Schwartz, 2000). Happy mood results in overestimating the likelihood of positive outcomes and

underestimating the likelihood of negative outcomes and sad mood has the opposite effect. In this way, affect may influence evaluations of all alternatives (Swenson, 2003). There are other aspects of emotion that affect choice or decision making. These are Emotion-specific, anticipated emotion and decision-generated emotion.

Emotion-specific is that which suggest that all positive affect would lead to optimistic judgements whereas all negative affect would lead to pessimistic judgements. Lerner and Kilter (2000) found that the negative emotions of fear and anger have different influences on judgement. They found that fearful people made higher risk assessments, whereas angry people made lower risk assessments. Lerner and Tiedens (2006) concluded in their research on the impact of anger on judgement and decision-making that anger has specific impacts leading to selective processing of information, increased risk-taking and optimism.

Anticipated emotion is about people's ability to predict future emotional states, including regret (Connolly and Butler, 2006). They found that a number of anticipated emotions (regret, disappointment, rejoicing and elation) about the outcomes of choice guide choice and predict choice behaviour.

Decision-generated emotion is the influence of one's emotion on decision-making. Individual differences in emotionality affect decision-making. People differ in both their emotionality and their ability to regulate their emotions, and these differences are related to the development of social competence (Eisenberg et al., 1997). It is suggested that children who are high in emotionality and poor at regulating emotion will show deficits in social information processing and this then affects judgement and choice

(Lemerise and Arsenio, 2000). It should be mentioned that some school of thoughts have it that personality factors will affect choice-making. As pointed out by Clack, Allen, Cooper and Head, (2004) there is clearly potential for differences in personality to interfere and disrupt the shared decision-making processes, including expert and non-expert decision-making situations.

2.3 Career Theory

Career guidance and counselling began in the years of Frank Parson as a trait-factor approach in the early twentieth century (Zunker, 2002). It evolved to become a rather mature discipline today in the twenty-first century with a strong theoretical and empirical base, with the potential to further develop into a more global discipline in the years ahead (Leung, 2004; Zunker, 2002). The development of career guidance and development into a global discipline requires a set of theoretical frameworks with universal validity and applications, as well as culture-specific models that could be used to explain career development issues and phenomenon at a local level (Lips-Wiersma and McMorland, 2006). Over the years, notable career guidance and development theories have been used and around which new ones evolved. Among them is (a) Theory of Work-Adjustment, (b) Holland's Theory of Vocational Personalities in Work Environment, (c) the Self-concept Theory of Career Development (d) Gottfredson's Theory of Circumscription and Compromise, and (e) Social Cognitive Career Theory (Athanasou and Van Esbroeck, 2008). They are referred to as the "Big-five" career theories.

2.3.1 Theory of Work Adjustment

The Theory of Work Adjustment (TWA) is a class of theory in career development that is anchored on the individual difference tradition of vocational behaviour called person- environment correspondence theory, viewing career choice and development as continual processes of adjustment and accommodation in which: (a) the person (P) looks for work organisations and environments (E) that would match his/her “requirements” in terms of needs, and (b) E in turn looks for individuals who have the capabilities to meeting the “requirements” of the organisation (Dawis, 2002, 2005). Taken as a whole, TWA seeks to explain career development and satisfaction in terms of person-environment correspondence, and it offers career guidance professionals a template to locate entry points to assist individuals with career choice and adjustment concerns (Griffin and Hesketh, 2003).

2.3.2 Holland’s Theory of Vocational Personalities in Work Environment

The theory by Holland offers a simple and easy-to-understand typology framework on career interest and environments that could be used in career counselling and guidance. Holland postulated that vocational interest is an expression of one’s personality, and that vocational interest could be conceptualised into six typologies, which are Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C) (Holland, 1997). If a person’s degree of resemblance to the six vocational personality and interest types could be assessed, then it is possible to generate a three-letter code (e.g., SIA, RIA) to denote and summarise one’s career interest. The first letter of the code is a person’s primary interest type, which would likely play a major role in career choice and satisfaction.

The second and third letters are secondary interest themes, and they would likely play a lesser but still significant role in the career choice process. Holland's theory has an enormous impact on career interest assessment and research (Spokane, Meir and Catalano, 2000).

In the 40 years since Holland's theory was proposed, hundreds of research studies have been published to examine Holland's propositions and the validity of interest instruments that were based on his theory, including some studies using international samples. A major area of investigation among cross-cultural studies was whether Holland's proposed structure of vocational interests was valid across cultures (e.g., Rounds and Tracey, 1996). For example, Tak (2004) administered the Strong Interest Inventory to Korean college students, and findings suggested a good fit with Holland's circular model of interest, even though the shape of interest arrangement was not clearly hexagonal. In another study by Sverko and Babarovic (2006), the findings were supportive of Holland's circular model, even though the degree of fit was higher for older age groups.

2.3.3 Self-concept Theory of Career Development

Super (1990) suggested that career choice and development is essentially a process of developing and implementing a person's self-concept. According to him, self-concept is a product of complex interactions among a number of factors, including physical and mental growth, personal experiences, and environmental characteristics and stimulation. Building on Super's notion that self-concept theory was essentially a personal construct theory, Savickas (2002) took a constructivist perspective and postulated that "the process of career construction is essentially that of developing and

implementing vocational self-concepts in work roles”. A relatively stable self-concept should emerge in late adolescence to serve as a guide to career choice and adjustment. However, self-concept is not a static entity and it would continue to evolve as the person encounters new experience and progresses through the developmental stages. Life and work satisfaction is a continual process of implementing the evolving self-concept through work and other life roles.

Accordingly, to Super (1990), the concept of “career maturity” denotes the degree that a person was able to fulfil the vocational developmental tasks required in each developmental stage. Super conceptualised career maturity, with the following components: self-awareness, decision-making, career exploration, and career planning and management.

2.3.4 Gottfredson’s Theory of Circumscription and Compromise

Gottfredson (2005) assumed that career choice is a process requiring a high level of cognitive proficiency. Gottfredson’s (2002, 2005) elaborated on the dynamic interplay between genetic makeup and the environment. According to her genetic characteristics play a crucial role in shaping the basic characteristics of a person, such as interests, skills, and values, yet their expression is moderated by the environment that one is exposed to. Even though genetic makeup and environment play a crucial role in shaping the person, Gottfredson (2005) maintained that the person is still an active agent who could influence or mould his/her own environment. Hence, career development is viewed as a self-creation process in which individuals looked for avenues or niches to express their genetic proclivities within the boundaries of their own cultural environment. In comparison to the more established career development frameworks

such as Super's and Holland's theories, Gottfredson's theory of career development is a more recent contribution (Leung, 2007).

In contrast to the established notion that choice is a process of selection, Gottfredson (1981, 1996, and 2002) theorised that career choice and development could instead, be viewed as a process of elimination or circumscription in which a person progressively eliminates certain occupational alternatives from further consideration. Circumscription is guided by salient aspects of self-concept emerging at different developmental stages. Gottfredson maintained that the career aspirations of children are influenced more by the public (e.g., gender, social class) than private aspects of their self-concept (e.g., skills, interests).

A developmental model was proposed consisting of four stages of circumscription. The first is called "orientation to size and power" (ages 3–5), and the child perceives occupations as roles taken up by big people (adults). The second stage is called "orientation to sex-roles" (ages 6–8), and in this stage sex-role norms and attitudes emerge as defining aspect of a child's self-concept. The child evaluates occupations according to whether they are appropriate to one's sex, and eliminates from further consideration alternatives that are perceived to be gender inappropriate (i.e., the wrong sex-type). The third stage is called "orientation to social valuation" (ages 9–13) as social class and status become salient to a child's developing self-concept.

Accordingly, the emerging adolescent eliminates from further consideration occupations that are too low (i.e., occupations with unacceptable prestige levels) or too high (i.e., high prestige occupations beyond one's efficacy level) in prestige. The fourth

stage is called “orientation to the internal, unique self” (ages 14 and above), in which internal and private aspects of the adolescent’s self-concept, such as personality, interests, skills, and values, become prominent. The young adolescent considers occupations from the remaining pool of acceptable occupations according to their suitability or degree of match with one’s internal self.

Swanson and Gore (2000) commented that Gottfredson’s theory “is one of the few attempts to study specifically the period corresponding to Super’s growth stage. However, it essentially remains quite difficult to test the theoretical propositions, and unfortunately, an untestable theory is not particularly useful”.

Nevertheless, the theory by Gottfredson still offers unique perspectives to career guidance professionals internationally. For instance, in many cultures life accomplishment is measured by successes in education and public examinations and attainment in career positions that have high social status and influence. Likewise, gender stereotype is also a part of many cultures (e.g., Asian cultures), and individuals are encouraged to pursue occupations that are perceived to be compatible to their gender (Leung, 2002). Hence, Gottfredson’s theory offers a framework in which the influence of prestige and sex-type could be understood in diverse cultural contexts.

Meanwhile, as career guidance interventions are becoming more central in primary and secondary schools around the world (Gysbers, 2000), the theory by Gottfredson could be used as a conceptual guide to program development. Gottfredson (2005) outlined a model of career guidance interventions aiming to reduce risk and enhance

development, encouraging positive adaptation in relation to cognitive growth, self-creation, circumscription, and compromise.

2.3.5 Social Cognitive Career Theory

Social Cognitive Career Theory (SCCT) is anchored in Bandura's self-efficacy theory (1997), which postulated a mutually influencing relationship between people and the environment (Lent, Brown and Hackett, 2002; Lent, 2005). SCCT offers three segmental, yet interlocking process models of career development seeking to explain (a) the development of academic and vocational interest, (b) how individuals make educational and career choices, and (c) educational and career performance and stability. The three segmental models have different emphasis centring around three core variables, which are self-efficacy, outcome expectations, and personal goals.

Lent (2005) defined self-efficacy as "a dynamic set of beliefs that are linked to particular performance domains and activities". Self-efficacy expectations influence the initiation of specific behaviour and the maintenance of behaviour in response to barriers and difficulties. (Betz, Borgen and Harmon, 1996), SCCT theorised that self-efficacy expectations are shaped by four primary information sources or learning experiences, which are personal performance accomplishments, vicarious learning, social persuasion, and physiological and affective states. Lent (2005) suggested that of the four sources of information or learning experience, personal performance accomplishments have the most powerful influence on the status of self-efficacy.

Lent et al. (2002) defined outcome expectations as “personal beliefs about the consequences or outcomes of performing particular behaviour”. Outcome expectations include beliefs about extrinsic reward associating with performing the target behaviour, self-directed consequences, and outcomes derived from task performance.

Personal goals refer to one’s intention to engage in certain activity or to generate a particular outcome (Lent, 2005). SCCT distinguished between choice content goals, referring to the choice of activities to pursue, and performance goals, referring to the level of accomplishment or performance one aims to attain. Through setting personal goals, individuals could persist in tasks and sustain their behaviour for a long time in the absence of tangible external rewards or reinforcement (Lent, 2005).

SCCT offers a comprehensive framework to understand the development of career interest, career choice, and performance that is grounded in self-efficacy theory. In the past decade, SCCT has generated a large number of research studies, including some studies conducted with international samples (Hampton, 2005; Patton, Bartrum, and Creed, 2004). For example, a study by Nota, Ferrari, Solberg and Soresi, (2007) used a SCCT framework to examine the career development of Italian youths attending a university preparation program in Padua Province. The authors found a positive relationship between the career search self-efficacy of participants and family support, and a negative relationship between career search self-efficacy and career indecision.

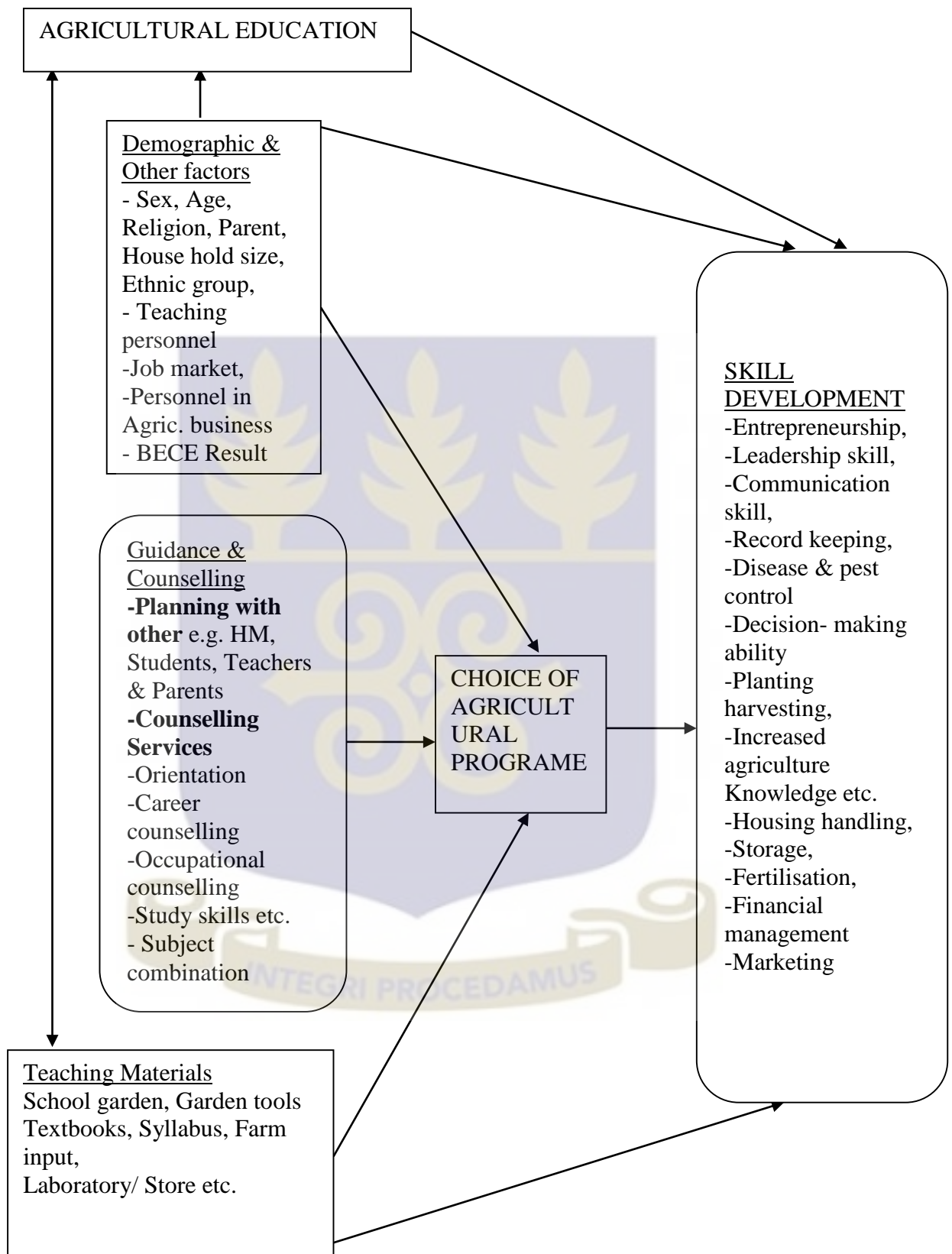
2.3.6 Indigenisation of Career Theories

In order to advance the career guidance discipline worldwide, it was suggested that there should be more indigenous efforts to develop theories and practice that would meet the idiosyncratic needs in diverse geographic regions (Leung, 2003). Indigenisation of career and guidance theory and practice aim to identify the universals as well as the unique experience, constructs and practice that are specific to particular culture groups (Leung, 2003). Indigenisation of the career guidance discipline could take the route of indigenisation from within and indigenisation from without. Indigenisation from within refers to the derivation of career theories, concepts, and methods from within a specific culture, relying on indigenous sources of information as the primary source of knowledge (Tien, 2005; Creed, Patton and Watson, 2002; Leung, 2002). In order to examine the validity of career theories across cultures, as a first step, cross-cultural researchers should develop instruments that are valid in their social and vocational contexts. Cross-cultural researchers have to make a choice between developing their own measures from scratch, or to adapt existing measures developed in the West (Leung, 2002).

2.4 Conceptual Framework

This research worked in the framework of three areas that influence the choice of agricultural program at SHS level and its subsequence lead to development of skills. These areas include demographic factors, guidance and counselling services and teaching and learning materials or resources.

Figure 1.1 Conceptual Framework



Source: Author (2015)

2.4.1 Demographic factors

Career choice has become a complex science with the advent of information technology, the emergence of post industrial revolution and job competition. Today, one has not only to make due career planning but also exhaustive career research before making a career choice so as to adjust with the evolving socio-economic conditions (Wattles, 2009). According to Kerka (2000), career choice is influenced by multiple factors including personality, interests, self-concept, cultural identity, demographic characteristics, globalization, socialization, role model, social support and available resources such as information and financial. According to Hewitt (2010), factors influencing career choice can either be intrinsic or extrinsic or both.

Hewitt further states that most people are influenced by careers that their parents favour. Students' perception of being suitable for particular jobs also has been found to be influenced by ethnic background (McQuaid and Bond, 2003). Arbogast (2008) examined the relationship between religion and career choice from career commitment perspective, he defined career commitment as the continuum of exploration, choice and effort that a person undergoes when choosing an occupation. Accordingly, Arbogast (2008) considered religion as a critical variable that plays a large role in the formation of value structures, social networks and application of time and money. Arbogast (2008) maintained that individuals who are religiously extrinsically-oriented, either personal extrinsic or social extrinsic, will exhibit higher level of career commitment than those individuals who are religiously intrinsically oriented. Arbogast (2008) findings corroborated Duffy (2005) findings that participation in a religion for some individuals, was a predictor of a person's tendency to move towards choosing a career.

2.4.2 Guidance and Counselling

Guidance and counselling services prepare students to assume increasing responsibility for their decisions and grow in their ability to understand and accept the results of their choices (Kauchak, 2011; Gibson, 2008). The ability to make such intelligent choices is not innate but, like other abilities, must be developed. Guidance and counselling in schools assists the student in selecting and utilizing opportunities within the school and in the outside labour market. With these students are assisted in making appropriate choices of courses of study and in making transitions from one school level to another, one school to another, and from school to employment (Heyden, 2011; Gibson, 2008). OECD (2012), explain guidance and counselling as a process of planned intervention within a school system by which the total development of students is stimulated in areas relating to their personal, social, career, emotional and academic concerns. Bangser (2008) stated that school guidance and counselling services should address the following three domains namely: personal – social, vocational – career and educational guidance and counselling.

Personal – social guidance and counselling deals with self-identity, social skills, relationships, conflict resolution, personal loss and other problems. Vocational or career counselling includes information about course requirements, post-secondary or tertiary institutions, career path planning potential employers and job hunting. Educational guidance and counselling provides information about educational opportunities beyond secondary school promotion or achievement learning strategies and study and test-testing skills. Gysbers and Henderson (2001) reiterate that

comprehensive school guidance and counselling services address the developmental need of students in the three domains mentioned above.

2.4.3 Teaching and learning Material

Teaching at any level requires that the students be exposed to some form of simulation. When the students are given the chance to learn through more senses than one, they can learn faster and easier (Yoder and Hochevar, 2005). The use of instructional materials provides the teacher with interesting and compelling platforms for conveying information since they motivate learners to learn more. Furthermore, the teacher is assisted in overcoming physical difficulties that could have hindered his effective presentation of a given topic. Ikerionwu (2000) refers to instructional materials as objects or devices which help the teacher to make learning meaningful to the learners.

Even if a person has essential skills, it might be difficult to accomplish his or her goals if the environmental context is not helpful, supportive or has insufficient resources. Both educators and students are likely to be motivated by adequate resources of the teaching and learning process (Kadhim, Taqi and Shuaibu, 2012). When students perceive the inadequacy of institutional resources as barriers, they become more frustrated, less motivated to learn, and reduce their efforts because they do not think that extra efforts will be translated into improved performance. So students are less likely to strive for an outcome (Mathieu, Tannenbaum and Salas 1992). The opposite effect is when students perceive the adequacy of institutional resources as enablers, they become more motivated to learn, and they believe that their efforts will be

facilitated rather than hindered, and they also believe that additional efforts will be translated into improved performance, and developed skills (Lent et al., 2000).

The use of instructional materials does not only encourage teachers and students to work collaboratively but also results in more cooperative learning activities among the students. Colbeck, Cabrera and Marine (2002) also noted that using different teaching methods require different teaching resources than assigning text book problem sets and delivering lectures. This shows how important teaching and learning materials or resources are in education and for that matter agricultural education.

In agricultural education, teaching or learning materials or resources have great impact on skill development. Resources including, school garden, garden tools, text books, syllabus, farm inputs and laboratories or stores etc. influences skill development in agriculture education and training. It can also influence students' choice of agricultural program since their availability puts confidence in students to develop skills that will make them efficient in the job market. For example, the school garden has been beneficial to students of all ages as they gain skills through gardening. Since they involve experiential and cooperative learning, school gardens have long been advocated as effective learning tools by many educational philosophers and reformers (Subramaniam, 2002). Waliczek, Bradley and Zajicek (2001) found that schools with a garden program that focused on students learning from the experiences a garden setting provided versus a traditional education setting harboured students with significantly more positive attitudes toward school.

2.5 Perspectives on Education

In our knowledge-based world, education is the single best investment countries can make towards building prosperous, healthy and equitable societies. It unleashes the optimal potential in people, improving individual's livelihoods and those of future generations. Education is a concept that may be defined in various ways, therefore, may defy precise definition. The reason of this difference of opinions is that different educationists, most of whom are philosophers, have different views about the aim of life. According to Idealists, the aim of life is spiritual development. As such, they regard education as a spiritual process, which aims at bringing together the soul and the creator leading to self-realization. Pragmatists think about education as a process of social progress. Because of this difference in the philosophy of life, different educationists define education differently. The fact is that the real concept of education is not related solely to any of the above-mentioned views. It is more than either of them.

In a real sense, education is a sort of synthesis of all the above viewpoints. In this sense, education includes the individuals, the society, the environment, the social fabric and the prevailing traditions. Hence, the definition of education ought to be a very comprehensive and all-inclusive one. Thus, education may be defined as a purposive, conscious or unconscious, psychological, sociological, scientific and philosophical process, which brings about the development of the individual to the fullest extent and also the maximum development of society in such a way that both enjoy maximum happiness and prosperity. Thus education is the development of individual according to his needs and demands of society, of which he is an integral part. (Kumar and Ahmad, 2008).

2.6 Educational System in Ghana

Ghana has always placed education as a priority at all levels, promoting it as a key indicator for social and economic development. Indeed, investing in education is a critical part of Vision 2020 (GoG, 2003). The government is the main provider of education from the primary to the tertiary level. There are few private institutions as well.

Ghana presently has a 6-3-3-4 education system. Pre-school is not compulsory. The pre-school is 2-year Kindergarten added to basic education after 2007 Educational Reform. Six (6) years of Primary education, three (3) years of Junior High School education, three or four (3) years of Senior High School Secondary, Technical or Vocational education and four (4) years Tertiary education including University, Training Institutes, Specialised Institutes and Polytechnics.

2.6.1 Basic education

The 1992 constitution of Ghana makes basic education a right for all Ghanaians. The constitution also makes basic education free and compulsory. The Free Compulsory Universal Basic Education (FCUBE) program of 1996 has contributed immensely to the structure of basic education that exists today in Ghana.

Basic education in Ghana consists of 2 years of kindergarten, 6 years of primary education followed by 3 years of junior secondary school (now Junior High School). Pupils spend a total of 11 years at this level of education. As outlined in the United

Nation's Millennium Development goals, Ghana wants to achieve universal basic education by 2015.

Upon completion of basic education in Ghana, thus JHS 3, students take the basic education certificate exams (BECE) which is organized by the West African Examinations Council (WAEC). The Basic Education Certificate Examination (BECE) examines students in 10 subject areas namely: Mathematics, English, Social Studies, Integrated Science, Agriculture, a Ghanaian Language, Religious and Moral Education, French, ICT and Pre-technical (comprising Basic Design, Home Economics, Visual Arts, Pre-technical).

2.6.2 Secondary Education

Education at this level is designed to cater for students' ages 16 to 18 years and lasts for 3 years after the 9 years of basic education. The objectives of the Senior Secondary School system are:

- i. To reinforce and build on knowledge, skills and attitudes acquired at the Junior Secondary School level;
- ii. To produce well developed and productive individuals equipped with the qualities of responsible leadership capable of fitting into a scientific and technological world and to contribute to the socio-economic development of their own areas and country as a whole;
- iii. To increase the relevance of the content of the curriculum to the culture and socio-economic problems of the country.

Senior Secondary School students study four (4) Core Subjects: English, Mathematics, Integrated Science, Agricultural and Social Studies. In addition, each student selects 3 subjects from a wide range of program – options consisting of 3 subjects to be studied under 5 specialised programs. These programmes are: -

- i) Agricultural Programme
- ii) Technical Programme
- iii) Business Programme
- iv) Vocational Programme
- v) General (Arts & Science) Programme

At both basic and secondary levels of education, the enquiry method is the instructional method used. Pupils and students are led to use their creative skills on projects and find out things for themselves. Students are encouraged to read, observe, explore and experiment.

2.7 Agricultural education

Agricultural education has been an essential factor in the success of agricultural development in many countries (Mulder, 2006). Osborne (2011) explained agricultural education as a single, broad social and behavioural science discipline that includes teaching and learning in formal and non-formal settings; reaching widely varied target audiences through interpersonal, group, and mass communications; and strengthening the leadership capacity and effectiveness of individuals and organizations. According to Vandenbosch (2006) Agricultural education is an applied discipline concerned with the preparation of agricultural workers including farmers, teachers of agriculture,

extension staff, researchers, agribusiness practitioners etc., to satisfy individual, community and national needs in the field of agriculture and agribusiness. Dailey, Conroy and Shelly-Tolbert, 2001) advocated that the purpose of Agricultural education is to develop love and understanding for agriculture, educating students and adults as to its importance, and the promotion of literacy throughout educational and community systems.”

2.8 Agricultural Education in Ghana

The importance of agriculture in the national economy is well recognised in terms of food production, income generation and employment opportunities (MoFA, 2007). However, the potential of agriculture in Ghana is marginally utilised. The policy of the government therefore is to modernise the agricultural sector and make it a catalyst for rural transformation making Ghana an agro-industrialised country in the process (Breisinger et al., 2008). The policy aims at improving the productivity of small-scale producers while actively promoting the emergence of medium and large-scale agricultural enterprises (CRDD, 2010; Breisinger et al, 2008).

In line with government policy, the Ministry of Education, recognizes the necessity for reviewing agricultural education to ensure the development of well-trained agricultural work-force including managers and specialists of various kinds. There is the need for a broad-based training in agriculture to equip agricultural students with scientific, vocational and technological competencies to enable them fit into various sectors of agriculture. The agricultural training offered at the SHS level, and also in the training

of General Agriculture, lays the foundation for further work in agriculture at the tertiary level (CRDD, 2010).

2.8.1 Junior High School

In recent times production and export of both traditional and non-traditional agricultural produce is being encouraged as a means of generating income with the view of raising the standard of living of the people. Currently, majority of Ghanaians is engaged in farming as a means of livelihood and it is essential that agriculture is taught as part of general education at the basic level.

Among the general aims of agriculture education at the basic level include:

- To contribute to the general education of pupils and develop a better citizenship, whereby pupils appreciate agriculture in their daily lives
- To equip pupils with entrepreneurial skills in agriculture production
- To enable pupils acquire basic knowledge and skills in food production and other agricultural vocations
- To enable pupils develop favourable attitudes towards agriculture production
- To expose pupils to scientific theories, observations and practices required understanding the soil, climate, plants and animals.
- To equip pupils with skills in processing, preservation, storage and marketing of agricultural produce.

- To prepare pupils for further training in agriculture
- To encourage sustainable management of agriculture resources.

With these aims the courses covers the following areas; introduction to agriculture, soil management, crop production, animal production, farm management, and entrepreneurship development in agriculture.

In 1998, the number of subjects examined was reduced from eleven or twelve to nine or ten, French being the optional subject. The BECE is administered and graded by WAEC; grading is on a descending 1-9 scale and consists of Continuous Assessment grades submitted by the student's school (30%) and the BECE national exam (70%). Nationwide, about four per cent of the grades in any one exam are 1's. Admission to the Senior Secondary School is based exclusively on BECE results. At the most competitive senior secondary schools in Ghana, students may need nine or ten grades of 1's on their BECE exams to gain admission (MoE, 2003).

2.8.2 Senior High School

Senior High School (SHS) consists of Forms 1 through 3, equivalent to the American grades ten through twelve. As Ghana's educational reforms are implemented, review and curriculum adjustment are frequent. The reform includes a core curriculum to be followed by all Senior Secondary students, along with five specialized programs, two or more of which will be offered in each school. Students will select one specialized program; within which they will follow one option consisting of a package of three subjects."

General Agriculture is studied by all candidates who select the Agriculture programme as their elective field of study in the Senior High School. Students offering this subject must have sound foundation in Integrated Science and Mathematics at the Junior High School level. In addition to General Agriculture, students are to select one subject from Group A and two subjects from Group B subjects as listed below:

Group A: Crop Husbandry and Horticulture, Animal Husbandry, Fisheries, and Forestry. Group B: Chemistry, Physics and Mathematics (CRDD, 2010)

According to CRDD (2010), the purpose of Agricultural Sciences for learners is to:

- Appreciate the importance of agriculture in the socio-economic development of Ghana.
- Acquire decision-making skills through the scientific principles of observation, data collection, analysis and interpretation.
- Develop skills and attitudes required for productive and profitable agriculture through practice and experiential learning.
- Recognise agriculture as a business and a viable livelihood option.
- Develop positive attitudes, interests, habits and good practices in agriculture
- Be aware of the roles of extension service in the agricultural value chain.
- Recognise job opportunities in agriculture.
- Acquire techniques for efficient management of agribusinesses.
- Acquire requisite knowledge and skills needed for further training in agriculture.

In order to achieve the above purposes of agriculture education at SHS level, the scope of course content is designed to cover the following areas;

- Introduction to agriculture and agricultural education
- Soil uses and management
- Farm mechanisation
- Crop production
- Animal production
- Agricultural economics
- Agricultural extension

2.8.3 Agricultural Education Program for farm Institutes

There are three main Farm Institutes currently in the country. These are in Adidome, Asuansi and Wenchi. Entry requirement to these Institutes is MSLC (Middle School Leaving Certificate) or BECE. The primary objective is to offer a one-year vocational training for prospective and practising farmers.

2.8.4 Agricultural Colleges (MoFA)

Five agricultural colleges are currently in operation by MoFA. These are:

1. Damango
2. Ejura
3. Pong-Tamale (Vet)
4. Ohawu
5. Kwadaso

Admission is offered to qualified graduates of SHS for three-year training in general agriculture. Pong-Tamale lays emphasis on animal health. Currently, Kwadaso has added a Diploma course to the Certificate course.

The main objective of the colleges is to teach vocational Agric as well as train personnel for MOFA and other Agric related organisations. It should be noted that Agricultural education is also offered at the Training Colleges, Polytechnics and some private institutions.

2.8.5 Agricultural Education in the Universities

Programs are offered at three levels.

- Diploma level. Admission to this program is offered to post Agric college field personnel, and graduates from teacher training colleges.
- Undergraduate level. SHS graduates as well as GCE "O" and GCE "A" level holders are admitted to this program.
- Postgraduate level. Graduates of outstanding performance are offered admission to pursue advance courses in areas of interest with emphasis on research into as aspect of the subject area.

2.9 Agricultural Education and Career Links

Agricultural Sciences prepares learners for additional Higher Education and Training, vocational careers, and the world of work and self-employment (CRDD, 2010; Okorley, 2001). Thus, learners develop entrepreneurial skills and can go into farming practice using the skills acquired to contribute to the local and national economy. It caters for careers such as; farming, horticulture, veterinarian, agricultural teaching,

environmental and natural resource manager, extension officer in Agriculture and marketing services, agricultural engineer, food technologist, agricultural economics and agricultural business management.

2.9.1 Agricultural Education and Training in Higher Education

According to MacGregor (2008) in order to meet the challenges of Agricultural production and food security facing African countries, improvement of a country's human resource capacity for productivity is a pre-requisite. Both formal and non-formal education is essential for improving food security and rural development and thus reducing poverty. Formal AET is needed for the production of skilled manpower to serve the agricultural sector through extension, research, entrepreneurship and commerce. Higher Agricultural education institutions are expected to play a leading role in the Agricultural and training systems at national level. Moleke (2005) asserts that these institutions should be an integral part of higher educational institution programmes and the research themes should include interests of small and poor agricultural producers and measurement of research impacts. MacGregor, (2008) identified a need for greater educational relevance and higher quality graduates.

Post-graduate training provides high-level scientists and researchers to pursue academic careers in agricultural and rural development. In Kirsten (2009) view, higher agricultural education institutions should develop education programmes and curricula responding to the need of socio-economic development by providing the knowledge and skills required to meet the needs of the people concerned. Furthermore, curricula and programmes should solve societal, technical and socio-economic challenges.

Spielman (2006) recommended that research should be an integral part of higher agricultural education institutions with research themes to include interests of smallholder farmers and subsistence agricultural producers. Research impact needs to be evaluated. The involvement and participation of higher agricultural education institutions in agricultural education training and rural development activities will lead to the formulation of national development policies (Spielman, Negash, Davis, and Ayele, 2006). Ghana like other countries will not develop without well-educated people with a strong agricultural base among all population groups to provide food security for improved nutrition and health of human resources for sustained agricultural production and economic development.

2.9.2 Importance of Agricultural education and Training

Generally, the improvement of a country's human resource capacity for productivity is a prerequisite for social, economic and technological development. Thus both formal and non-formal education is essential for improving agricultural and rural development (Wosyanju, 2009). As pointed out in the OECD Observer (2006), higher economic growth in Africa will not be possible without addressing, among others, problems such as illiteracy and low education levels which is prevalent in Africa of which Ghana is no exception, and where Agriculture is most likely to play an important role in resolving both economic and human development.

Agricultural Education and Training (AET) plays an important role in preparing farmers, researchers, educators, extension staff, and members of Agribusinesses and

others to make productive contributions (Mulder, 2006). Agricultural education for many years had and still been increasing subject knowledge of farmers. As a consequence of the restructuring of the agro-food complex, which consists of chains and networks, in which various specialists are working who are not trained in the agricultural disciplines, different kind of competencies are needed, like entrepreneurship, client orientation, sustainability, and innovation (Corcoran and Wals, 2004). Agricultural education has a rich heritage of developing student personal skills as well as providing abilities needed in agricultural employment through classroom and laboratory instruction and supervised agricultural experience (Maguire, 2002). Agricultural education has helped to explain new technology to farmers and teach them how to adapt and adopt improved production practices in order to increase their production and income (Egun, 2007). Over the years, agriculture programs have evolved to better serve the needs of students.

2.10 Guidance and Counselling

The educational and occupational scene is fast changing everywhere. Curriculum and extra-curriculum offerings have tremendously expanded during the past few years. Occupations too have increased many folds. It is becoming increasingly difficult for educational generalists to prepare the youth for education, training and vocation in this rapidly changing world. In addition, quite a large number of students in our schools, colleges and universities find themselves in the grip of personal adjustment problems (Rayburn 2004; Yuk Yee and Brennan, 2004). Loneliness, feeling of insecurity, conflict with peers and teachers, low academic achievement and bad company create tension and anxieties in the students (Chireshe, Chireshe and Mudhovosi, 2009). All

these factors make it necessary that we take a hard and realistic look at our education to find out ways and means of analysing the energies of the students.

In productive pursuits, it arrests the downward trend of academic standards and eases emotional tensions and anxieties. Therefore, it is felt that institutions of education should take the responsibility of providing guidance and counselling to students (Paisley 2001; Bruce and Cockreham, 2004).

The term 'guidance and counselling' has been conceived internationally in different ways. According to Gibson (2008), Guidance and Counselling is a planned and organized work aimed at assisting an individual to understand himself and his abilities and develop his potentialities in order to solve his problems and achieve psychological, social, educational and professional compatibility in relation to his environment. OECD (2003) described guidance and counselling within education systems as having an important role to play in laying the foundations for life long career development, including knowledge and competencies regarding self-awareness, the world of work and making decisions and transitions.

2.10.1 School Guidance and Counselling Services (SGC)

UNESCO (2009) states that adolescents the world over have historically benefited from the presence of informal counsellors within the society. However, migration and urbanisation has resulted in a sense of isolation among the youth who have lost traditional family-social networks. The increased number of problems students face worldwide, has resulted in some scholars calling for the provision of School Guidance and Counselling (SGC) services (Otwell and Mullis,1997; Rice and Leffer, 1997; Paisley 2001; Bruce and Cockreham, 2004).

Guidance and counselling services prepare students to assume increasing responsibility for their decisions and grow in their ability to understand and accept the results of their choices (Kauchak, 2011; Gibson, 2008). The aims of the guidance and counselling service are similar to the purposes of education in general—to assist the student in fulfilling his/her basic physiological needs, understanding him/her and acceptance of others, developing associations with peers, balancing between permissiveness and controls in the educational setting, realizing successful achievement, and providing opportunities to gain independence (Heyden, 2011).

The primary mission of a school's guidance and counselling program is to provide a broad spectrum of personnel services to the students. These services include student assessment, the information service, placement and follow-up, and counselling assistance. These four areas should constitute the core of any guidance program and should be organized to facilitate the growth and development of all students from

kindergarten through post high school experiences (Erford, 2010; Erford, 2011; Neukrug, 2011). Egbochuku (2008) and Lunenburg (2010) also stated that School Guidance and Counselling programmes aim to assist students to develop the ability to understand themselves, to solve their problems and to make appropriate adjustments to their environment (Egbochuku 2008; Lunenburg 2010).

The purposes of guidance and counselling provide emphasis and strength to the educational program. Some specific purposes of the school guidance and counselling program include the following (Gibson, 2008):

- i. To provide for the realization of student potentialities

To all students, the school offers a wide choice of courses and co-curricular activities. A significant function of education is to help students identify and develop their potentialities. The counsellor's role is to assist students to distribute their energies into the many learning opportunities available to them. Every student needs help in planning his major course of study and pattern of co-curricular activities.

- ii. To help students with developing problems

Even those students who have chosen an appropriate educational program for themselves may have problems that require help. A teacher may need to spend from one-fifth to one-third of his time with a few students who require a great deal of help, which deprives the rest of the class from the teacher's full attention to their needs. The counsellor, by helping these youngsters to resolve their difficulties, frees the classroom teacher to use his time more efficiently.

- iii. To contribute to the development of the school's curriculum

Counsellors, in working with individual students, know their personal problems and aspirations, their talents and abilities, as well as the social pressures confronting them.

Counsellors, therefore, can provide data that serve as a basis for curriculum development, and they can help curriculum developers shape courses of study that more accurately reflect the needs of students. Too often, counsellors are not included in curriculum development efforts.

iv. To provide teachers with technical assistance

Pre-service teacher training institutions typically provide very limited experience with the more technical aspects of guidance work. Thus, a need exists in most schools for assistance with guidance and counselling functions essential to the educational program. Specifically, the guidance counsellor is qualified to assist teachers with selecting, administering, and interpreting tests; selecting and using cumulative, anecdotal, and other types of records; providing help and suggestions relative to counselling techniques, which teachers can use in counselling their students; and providing leadership in developing and conducting professional development of teachers in guidance functions.

v. To contribute to the mutual adjustment of students and the school

Guidance has a responsibility for developing and maintaining a cooperative relationship between students and the school. Teachers and counsellors must be cognisant of students' needs. Students also must make adjustments to the school. They have a responsibility to contribute something to the school. A major contribution of students is that of making appropriate use of the school's resources and working toward accomplishments. Such mutual adjustment of students and school is facilitated by providing suggestions for program improvements, conducting research for educational

improvements, contributing to students' adjustment through counselling, and fostering wholesome school-home attitudes.

Ojo (2005) also enumerate the following as purposes of guidance and counselling;

- i. Find out and make individuals aware of their basic personal prerequisites, abilities, assets, liabilities and potentialities,
- ii. Assist students in making appropriate and satisfying personal, vocational and educational choices;
- iii. Assist student acquire a positive image of self through self-understanding the needs and problems of each person,
- iv. Assist teachers and school personnel in understanding the needs and problems of each student,
- v. Assist school authorities / administrators in improving educational objectives and programmes of interpersonal relationships;
- vi. Mobilize all the available resources of the school or home for satisfaction of the vocational, educational and socio-personal needs of the students;
- vii. Help students develop proper attitude towards themselves, others, school, values, interests, morals, beliefs and discipline;
- viii. Help students develop to optimize and utilize their skills and correct the sources of their weaknesses and to improve the standard of education;
- ix. Promote in pupils good sense of awareness, ability to acquire a good knowledge of the world of work, possibility of continuing education and ability to make realistic decisions
- x. Help people achieve independence with a minimum of conflict with institutional values

2.10.2 Benefits of guidance and counseling in schools

Undoubtedly guidance and counseling has been very beneficial to students, teachers as well as parents. Among these benefits include; students given solutions on how to deal with psychological problems which might affect their studies, advised on how to cope with different situations facing them in their school life, their behavior shaped and instill discipline in them, students get to learn how to live in harmony with others in the school community, it also bridges the gap between the students and the school administration, since can channel their problems through guidance and counseling office, students get comprehensive advice on careers, courses and jobs, ensures every student receives the benefit of the school counseling program by designing content curriculum for every student and equitable access to educational opportunities.

2.11 Extracurricular Activity

Extracurricular activities are activities that students participate in that do not fall into the realm of normal curriculum of schools (Lunenburg, 2010). They are found in all levels of our schools. There are many forms of extracurricular activities such as sports, clubs, governance, student newspaper, music, art and drama (Darling, Caldwell and Smith, 2005). Extracurricular activities are totally voluntary so students that do not want to participate in them do not have to. Lunenburg states in his article that “Extracurricular activities serve the same goals and functions as the required and elective courses in the curriculum. However, they provide experiences that are not included in formal courses of study”. They allow students to apply the knowledge that they have learned in other classes and acquire concepts of democratic life (Lunenburg, 2010).

2.11.1 History of Extracurricular Activities

Extracurricular activities began in the United States in the 19th century. At first they were just an additional part to the normal academic schedule for the year. Extracurricular activities usually had some practical or vocational interest that was included into the activities. The first extracurricular activities that were well known in schools started at Harvard and Yale University. They were literacy clubs that consisted of different debate clubs and Greek systems such as fraternities and sororities. Students in American schools were the first to initiate athletic clubs. (Casinger, 2011).

The development of extracurricular activities was slow in the beginning, with many seeing it simply as a fad that would pass and quickly fade out of style (Brown, 2000). In fact, before 1900, educators were sceptical of participation in extracurricular activities, believing that “school should focus solely on narrowly defined academic outcomes. Non-academic activities were viewed as being primarily recreational and therefore, were detrimental to academic achievement, and consequently were discouraged” (Marsh and Kleitman, 2002). It was not until recently that “educational practitioners and researchers have taken a more positive perspective, arguing that extracurricular activities may have positive effects on life skills and may also benefit academic accomplishments” (Marsh and Kleitman, 2002).

2.11.2 The effect of Extracurricular Activities on Students

The first effect that extracurricular activities have on education is behaviour. Students that participate in extracurricular activities have reduced behaviour problems (Brown,

2000). In sports, they show discipline in drills, practices, and routines. They have a responsibility to perform those tasks correctly. The most dangerous time for bad behaviour is the time after school and before parents get home, which is usually the time between three o'clock and seven o'clock. (Holloway, 2002). This is the time when they are at the most risk at committing violent acts and victimization. The ages that usually are involved in poor behaviour during this time are between twelve and seventeen years old. (Howie, 2010). Between the ages of nine and seventeen is when kids learn to make their own decisions and control their behaviour.

Extracurricular activities help students to develop positive attitude toward school (Cosden, Morrison, Gutierrez and Brown, 2004). Self-esteem can be a predictor of academic performance. "Participation in an after school program that is designed to build self-esteem, had positive effects on students' academic performance (Schueer and Mitchell, 2003; Cosden et al., 2004).

The third effect that extracurricular activities have on students is school completion. The average dropout rate reduces when students participate in extracurricular activities (Casinger, 2011). Students who participate in extracurricular activities are less likely to drop out and more likely to have higher academic achievement. Those students that are at risk of failure appear to benefit even more from participation in extracurricular activities than those who are normal achievers. This is especially important for students who belong to ethnic minorities, students with disabilities, and at risk of dropping out because students in some of these groups have almost a 40% drop out rate (Casinger, 2011). Engagement in extracurricular activities is linked to decreasing rates of early

dropout rates in both boys and girls. Sports are one of the biggest extracurricular activities to have effects on students. The athletic program reduces the dropout rates by 40 % (Holloway, 2002; Dowshen, 2007).

The fourth effect is the social aspect. Students that are involved in extracurricular activities meet many new people. Each club or sport is different, so students meet different people in all different groups. By joining different ones, they meet people with the same backgrounds they have and people they share interests with. Most times the people that students meet are students that they would never talk to or become friends with on a normal basis. In different extracurricular activities students learn about group work, and sometimes they end up having less conformity to gender stereotypes.

Extracurricular activities are a part of students' everyday life. They play important roles in student's lives. They have positive effects on student's lives by improving behaviour, school performance, school completion, positive aspects to make successful adults, and social aspects (Miller and Zittleman, 2010).

2.11.3 Extracurricular Activities and Academic Performance

Numerous studies have been conducted concerning the relationship between extracurricular activities and academic performance. Total Extracurricular Activity Participation (TEAP), or participation in extracurricular activities in general, is associated with an improved grade point average, higher educational aspirations, increased college attendance, and reduced absenteeism" (Broh, 2002). Guest and Schneider (2003), in looking at the previous research on this subject said, "Researchers

have found positive associations between extracurricular participation and academic achievement”. Many extracurricular activities have proven to be beneficial in building and strengthening academic achievement, even if the activities are not obviously related to academic subjects (Marsh and Kleitman, 2002). According to Darling, Caldwell and Smith (2005), adolescents who participated in extracurricular activities reported higher grades, showed more positive attitudes toward school, and higher academic aspirations.

Scheuer and Mitchell (2003) statistical analysis indicated a distinct and linear correlation between students’ academic achievement and fitness scores in all three grades. In their study they stated that “higher academic performance was positively related to higher levels of fitness with the greatest academic gains in students who met three or more physical fitness standards”. Studies reflect a strong positive relationship between participation in music and academic performance (Ponter, 1999; Eady, 2004).

2.11.4 Educational Trips as Extracurricular Activities

A history of field trips, if we consider the long term, we will realize that children have learned by being with their parents or placed in apprentice situations with employers for most of human history. In a sense, field trips were the norms, until the invention of formal education (Aggarwal, 2003). The state name “Sparta” was famous for their physical training. The same is the case with “Athens” where children are trained physically very toughly (Aggarwal, 2003). Aggarwal (2008) describes that over the years, educators, philosophers like Comenius (1592-1670), Rousseau (1782-1852),

Pestalozzi (1746-1827), Herbart (1746-1841), Froebel (1782-1852), Spencer (1820-1903), and Dewey (1859-1952) have pointed out the need for reinforcing abstract learning with concrete experiences.

Sampath, Panneerselvam and Santhanam (2006) listed various types of educational field trips which are conducted by the institution accordingly such as: local trips, community trips, tours, Inter-school visits and Individual trips. Myers and Jones (2009) stated that educational field trips should be designed around specific educational objectives. If a field trip is not planned well in advance, it will end in confusion and will be a waste of time and money. According to Youth learn initiative “field trips are a great way to bring excitement and adventure to learning.” According to Zanetis (2010), “The knowledge of the world can only be acquired in the world and not in a closet”. Books will never teach you but they will suggest many things to your observations.”

The purpose of the trip is usually observation for education, non-experimental research or to provide students with experience outside their everyday activities. Field trips give them a chance to get out of the classroom and experience something new which is necessary for this level. They allow students to have a real world experiences. Aggarwal (2008) clears that educational field trips aims at enriching, vitalizing and complementing content areas of the curriculum by means of first hand observation and direct experience outside the classroom. According to Randy (2006) “Field trip is a substantive way to expand student’s horizons and allow them to learn experientially.” Chand (2004) links it with the availability of learning materials on the internet. Some teachers and students may question why field trips are needed anymore. Field trips can

be troublesome and difficult to organize and supervise. But they do provide learning opportunities that cannot be experienced in the classroom. They are a great way to communicate difficult information. Through educational field trips, most of the concepts and phenomena may be easily clarified understood and assimilated and with the help of this, good deal of energy and time of both the teachers and students can be saved. Sampath et al. (2006) mentioned that during the field trips the pupil has concrete learning experiences in a real situation which has been undertaken with a specific purpose.

2.12 Teaching and Learning Materials

Teaching at any level requires that the students be exposed to some form of simulation. Adekunle (2008) noted that teaching resources means anything that can assist the teacher in promoting teaching and learning. Ikerionwu (2000) refers to instructional materials as objects or devices which help the teacher to make learning meaningful to the learners. Similarly, Ogbondah (2008) classified them into two as visual materials, made up of reading and non-reading materials and audio-visual materials comprising electrically operated and non-electrically operated materials. Jimoh (2009) summarized these resources as textual like books, audio-visual and human resources. They stated that these resources are either used individually or collectively in any meaningful teaching and learning situation.

Where students are likely to be active in the learning process by participating in discussion and/or collaborative activities, teaching and learning is inevitable (Halonen

Brown-Anderson and McKeachie, 2002). Akman and Mungan (2010) argue that, in learner-centred instruction students not just listen to the lecture, but they are interested in the topic as well, the development of student's skills is more important than the capture of course content, the students use higher-order thinking levels such as analysis, synthesis, and evaluation, and the students are active throughout the lecture either by discussing, reading or writing. Learner-centred instruction requires students to be engaged actively in the learning process and involve in higher order thinking skills such as the ability to analyse, synthesize and evaluate information which require learning resources (Dubin-Bryant, 2004) Using different teaching methods requires different teaching resources than assigning textbook problem sets and delivering lectures (Alfatiemy, Norwani and Yusof, 2012). Colbeck, Cabrera and Marine, (2002) found a positive relationship between perceived adequacy of computer and laboratory support and the use of group and design projects.

When a person has essential skills, it might be difficult to accomplish her/his goals if the environmental context is not helpful, supportive or has insufficient resources. Both educators and students are likely to be motivated by adequate resources of the teaching and learning process (Kadhim, Taqi and Shuaibu, 2012). The purpose of instructional materials is to promote efficiency of education by improving the quality of teaching and learning (Abdo and Semela, 2010).

Incorporating these tools and materials present support and reinforce teaching. Bozkurt and Ilik (2010) pointed out that courses with interactive simulations have a positive effect on students' beliefs about physics and physics achievement, because they found

that students who studied with simulations are more successful than students who studied with traditional methods. Hunt, Haidet, Coverdale and Richards (2003) found positive learning outcomes related to demonstration methods with teaching materials, as compared to traditional lecture-based methods. When the students are given the chance to learn through more senses than one, they can learn faster and easier. The use of instructional materials provides the teacher with interesting and compelling platforms for conveying information since they motivate learners to learn more (Jotia and Matlale 2011).

According to Aduwa-Ogiegbaen and Imogie (2005) these materials and resources including audio tape recorders, video tape recorders, overhead projectors, still pictures, programmed instruction, maps, chart, graphs and many more offer a variety of learning experiences individually or in combination to meet different teaching and learning experiences. Other researchers including Yeager (2000) and Ogbondah (2008) have emphasized the importance of instructional materials and resources in the effective delivery of lessons in secondary schools. These views have been corroborated by international researchers including Bolick, Berson, Coutts and Heinecke (2003), Killen (2006), Kadzera (2006), Abdo and Semela (2010) and Dahar and Faize (2011).

2.12.1 Advantages of Teaching and Learning Materials (TLMs)

Teaching and learning materials are used for many reasons and for these reasons they have several advantages. In most cases they are used to supplement in verbal instructions, makes learning permanent and provide variety. In addition, they are

helpful in attracting attention of the students, saves time and energy, they encourage healthy classroom interaction, they help teacher to create situations for teaching beginners, meet individual differences and give vividness to the learning situations. It is also for a fact that teaching and learning materials, makes the abstract ideas concrete and thus help in making learning more effective, provide good substitutes for the real objects as they make learning equally meaningful and help in the development of various skills such as how to draw a diagram of the topic among the students.

2.12.2 Disadvantages of Teaching and Learning Materials (TLMs)

Despite the above listed advantages of teaching and learning materials, there is cost involved if the materials are to be of quality. Preparing these materials need adequate training and skills if not its purpose or intend cannot be met. One should also lose sight of the fact that teacher-made materials will not normally have the same standard of design and some teaching and learning materials are sophisticated for easy and smooth handling.

2.13 Summary

Literature was reviewed, starting with the theoretical perspectives of choice of a career. A conceptual framework on agricultural education and choice of agriculture as a subject was examined. Further, literature was reviewed on education systems in Ghana, Guidance and counselling, and teaching and learning materials.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter gave the detail of the methodology adopted for the research. The following areas were also elaborated on as used in the study research design, population of study, sampling procedure, unit of analysis, data collection methods, data collection, data analysis operationalization of concepts and limitation of the study.

3.1 Research design

Creswell (2003) defined research design as links of philosophical assumptions to the specific methods used in the research. However, Kumar (2005) also defined it as a planned structure and strategy of investigation so conceived as to obtain answers to research questions or problems. For the purpose of this research, the survey design was selected for the study because of its numerous advantages including how it allow the researchers to collect a large amount of data in a relatively short period of time, being less expensive than many other data collection techniques, can be created quickly and administered easily and can be used to collect information on a wide range of things, including personal facts, attitudes, past behaviors and opinions.

The strength of the study was quantitatively driven. The purpose of using quantitative method is to quantify data and generalised results from a sample to the population of interest. It is also used to measure the incidence of various views and opinion in a

chosen sample. With this method you are able to look at relationships between variables and establish cause and effect in highly controlled circumstances.

3.2 Study Area

The research was undertaken in the Greater Accra Region because it has a lot of second cycle institutions with a number of Senior High Schools running Agricultural Science Program. The Greater Accra region is bordered on the north by the Eastern Region, on the east by the Lake Volta, on the south by the Gulf of Guinea, and on the west by the Central Region. It lies in the geographical coordinates of $0^{\circ} 34' 30''$ E and $0^{\circ} 27' 30''$ W (Figure 1). The region lies within the coastal plain which experiences two rainy seasons with the first from May to June and the second from September to October. It is the smallest region in the country in total area and is made up of 10 districts.

There are sixty Senior High Schools (SHS) comprising of public, private and international schools located in the region. The Accra Metropolitan Assembly has thirty-six (36) Senior High Schools, Tema Municipal, eleven (11), Dangme West, four (4), Dangme East, two (2), Ga West, four (4) and Ga East three (3). Obviously, with the greater number of SHS located within Accra, so is the population of students in these schools outweighing those of the other Districts. The total number of students in the region is about 163,540 out of which 2735 students offer agricultural program from 15 SHS.

Figure 1.2 Map of Study Area



Source: CERSGIS, 2013

3.3 Population of the study

A study population refers to the total number of individuals who we are interested in describing and making statistical inference about in the research (Heldal and Jentoft, 2011). In this research, the population of the study used comprised of agricultural science students in SHS, heads of agricultural science department and guidance and counselling coordinators in schools that offer agricultural science program.

3.3.1 Unit of analysis

Units of analysis are those elements that are examined in order to create summary descriptions of all such units and to explain differences among them (Babbie, 2005). This may include individuals, groups and artefacts. The unit of analysis for this study is therefore students at SHS in schools that offer agricultural science programme, heads of agricultural science department and finally, guidance and counselling coordinators. This is because the relevance of agricultural education depends on them and whatever that goes on in agricultural education affects them particularly the students.

3.3.2 Sampling procedure

Sampling is a process of selecting a few from a bigger group to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group (Kumar, 2005). The main reason why a sample is needed is because it would be virtually impossible for a data to be taken on a very large population, especially considering the issue of cost (Barreiro and Albandoz, 2001). In social research, there are two types of sampling; probability and non-

probability. In this research, the two sampling methods were used. That is, the probability sampling method was used for the students while the non-probability method was used for heads of agricultural science department and guidance and counselling coordinators.

In probability sampling, samples are selected based on probability theory (Babbie, 2005). A probability sampling scheme is one in which every unit in the population has a chance (greater than zero) of being selected in the sample, and this probability can be accurately determined. The combination of these traits makes it possible to produce unbiased estimates of population totals, by weighting sampled units according to their probability of selection. Probability sampling include: simple random sampling, systematic sampling, stratified sampling, probability proportional to size sampling, and cluster or multi-stage sampling (Babbie, 2005).

A multi-stage sampling procedure was used to select schools that offer agricultural programme for the study. This is because these schools contain the potential units of analysis. Fifteen (15) schools were sampled out of the total of 65 since only this number of SHS offers agricultural science programme. For the students, stratified random sampling process was done to get the sample needed for the study. Stratified sampling is a technique used when the population in which a sample is to be drawn does not constitute a homogeneous group (Dawson, 2002). This technique was used because the student respondents were to be drawn from different SHS levels.

In non-probability sampling, sample selection is not informed by probability theory (Babbie, 2005). Non-probability sampling is any sampling method where some elements of the population have no chance of selection. It involves the selection of

elements based on assumptions regarding the population of interest, which forms the criteria for selection. Hence, because the selection of elements is non-random, non-probability sampling does not allow the estimation of sampling errors. These conditions place limits on how much information a sample can provide about the population.

Information about the relationship between sample and population is limited, making it difficult to extrapolate from the sample of the population. Non-probability sampling includes: accidental, quota and purposive sampling (reference). Purposive sampling is a form of non-probability sampling in which the selection of the sample is based on the judgements of the researcher as to which subjects best fit the criteria of the study. The purposive sampling method was therefore used for the heads of departments and guidance and counselling coordinators.

3.3.3 Sample size

According to Burton (2005), there are no definitive answers as to how large a sample for a social research should be. However, it is known that the larger the sample size, the smaller the sampling error. The number of student's potential respondents in the fifteen (15) schools that have agricultural programme were Two thousand, seven hundred and thirty-five (2,735). The population was considered reasonable enough from which a sample size can be drawn.

In all, a total sample size of 310 students was used for this research, fifteen (15) heads of agricultural science department and fifteen (15) guidance and counselling coordinators. The figure student respondent was arrived at by using Cochran (1977) sample size formula:

$$n = \frac{t^2(p)(q)}{d^2}$$

Where

□ t = value for selected alpha level (0.05) = 1.96. The alpha level of 0.05 is the level of risk the researcher is willing to take that true margin of error may exceed acceptable margin of error.

□ $(p)(q)$ = estimate of variance. If our standard of deviation (SD) = 0.5, $S^2 = (p)(q) = (0.05)$. The maximum possible sample size SD is 0.5.

□ d = acceptable margin of error for proportion being estimated = 0.05.

$$n = \frac{t^2(p)(q)}{d^2}$$

$$n = \frac{1.96^2 (0.5)(0.5)}{0.05^2}$$

$$n = 384$$

Since 384 was > 5% of our population (2735), the Cochran's formula was used to get the final sample size.

$$n_1 = \frac{n_o}{1 + \left(\frac{n_o}{s}\right)}$$

Where

- n_o = initial sample size
- s = population size

$$n_1 = \frac{384}{1 + \left(\frac{384}{2735}\right)}$$

$$n_1 = 310$$

Total population sampling was done for the heads of agricultural science department and guidance and counselling coordinators with the same reason stated above.

Table 3.1 Sample Frame

Senior High Schools	Total Students Population	Percentage of Student Population	Total Sample Size
Accra Academy High School	191	7.1	22
Achimota School	217	8.4	26
Ebenezer Senior High School	167	6.1	19
St. Thomas Aquinas High School	186	6.5	20
St. John Grammar School	177	6.5	20
Presbyterian Boy's Senior High School	197	7.1	22
N'Gleshie Amanfro Senior High School	161	5.8	18
West African Secondary School (WASS)	181	6.7	21
Ada Senior High School	177	6.5	20
Ada Secondary/ Technical School	147	5.5	17
Osudoku Senior High School	172	6.5	20
Ghanata Senior High School	187	6.7	21
Ningo Senior High School	177	6.5	20
Ashaiman Senior High School	211	7.7	24
Odorgonno Senior High School	187	6.5	20

Source: Field study (2013)

The sample total sample size for the various schools were arrived at by dividing the number of students offering the programme in the schools (n) by the total number of potential student respondents (T_n) and multiplied by the student sample size (n_1). The percentages were arrived at by dividing the sample size of the various schools by the total student sample size multiplied by 100%.

3.4 Data collection instrument

Data collection instrument is any type of written or physical device which is purported to be used for measuring variables (Kambonga, 2005). The questionnaires were administered for the collection of data. A questionnaire is a document containing questions and other types of items designed to solicit information appropriate for analysis. It is cheaper to administer and response rates also higher (Gray, 2004). The questionnaire used contains open ended, close ended and Likert-type questions. The open ended questions allow for spontaneity and freedom, which is essential in exploring certain quantitative aspects of a problem while the close ended questions allow for quick and short responses and also limited responses by providing options.

Table 3.2 Objectives, Information required Source and Data collection instrument used.

Objective	Information Required	Source	Data Collection Instrument used
To assess the contributions of guidance sessions of the choice of agricultural programs at the SHS level.	-Planning of guidance and counselling services -What kind of counselling is given? -How is the counselling done? -Extra curricula activities organised by the department -What is its contribution to choice of agricultural programme?	-Guidance and Counselling coordinators -Students	-Questionnaire -Interviews
To identify factors that influences the choice of agriculture program at the SHS level.	-Background -Factors influencing student's choice of agricultural programme -Guidance and counselling service influence on choice of programme -Extra curricula activities influencing the choice of agricultural programme	-Heads of Agricultural science department -Students	-Questionnaire -Interviews
To examine the influence of teaching materials on agricultural education and skill development by agricultural students at the SHS.	How teaching materials influence agricultural education and skill development.eg. -School garden -garden tools etc.	-Heads of Agricultural science department -Students	-Questionnaire -Interviews

Data collection instrument is any type of written or physical device which is purported to be used for measuring variables (Kambonga, 2005). The questionnaire and interview schedules were employed for the collection of data.

A questionnaire is a document containing questions and other types of items designed to solicit information appropriate for analysis. It is cheaper to administer and response rates also higher (Gray, 2004). The questionnaire used contains open ended, close ended and likert-type questions. The open ended questions allow for spontaneity and freedom, which is essential in exploring certain quantitative aspects of a problem while the close ended questions allow for quick and short responses and also limited responses by providing options.

3.4.1 Pre-testing questionnaire

Pre-testing a questionnaire, like pretesting a schedule, provides an opportunity for detecting any mistake in the framing of questions such as lack of consistency and clarity (Bell, 1993). According to Sarantakos (1993) pre-testing are small tests of single elements of the research instrument and are predominantly used to check eventual 'mechanical' problems of the instrument. Also according to David and Sutton (2004) it allows a preliminary data analysis to establish whether there would be difficulties in the main data analysis and to ensure that the collected data answers the researcher's questions.

Through literature, variables were identified to be used in the design of the data collection instrument- questionnaire. To ensure for the reliability and validity of the survey questionnaire pre-testing was carried out in St. Thomas Aquinas Senior High, Ashaiman Senior High and St. John Grammar School having similar characteristics in terms of agricultural programme to those Schools used in the main study. Fifteen (15) students, three (3) guidance and counselling coordinators and three (3) heads of agricultural science departments were used. To be reliable, the researcher checked how the survey questions were answered by respondents the same way whiles the survey question's validity was determined by how well it measured the concept(s) it intended to measure. Pre-testing offered the researcher the opportunity to make necessary corrections to some of the questions and also fine-tune the volume and content of the survey questionnaire as well as organise material necessary to facilitate effective and efficient data collection in the main study.

3.4.2 Data collection procedure

A visit was first made to the sampled school and after submitting an introductory letter to the school authority, a discussion was held between the researcher, the HODs of Agricultural Science Department and the Guidance and counselling coordinators. Dates were set for the administering and collection of the questionnaires. On the scheduled dates the student respondents were drawn from the year group classes to make up the number. They were given the questionnaire to answer while the researcher explains certain things to them. They were given ample time to answer the questions but the questionnaire was collected the same day. The HODs of Agricultural Science

Department and the Guidance and Counselling coordinator all responded to the questionnaire the same day.

3.5 Data analysis and interpretation

Data gathered from survey questionnaires were cross-checked for accuracy, completeness and uniformity of responses. After coding, the responses were keyed into the Statistical Package for Social Science (SPSS Version 16) for analysis. Univariate analysis, describing cases in terms of variables were done using frequency distribution tables. Bivariate analysis on the other hand was used to describe cases in terms of two variables: the paired sample test and the chi-square test were used.

The frequency distribution table was used to test for individual occurrence of the variable of interest. This enabled the researcher to know how regular a variable was from the total and then make deductions to meet the objectives of the study. The paired sample test was used to compare differences in mean within a variable of a respondent. In other words, it was used to compare two scores from the same respondent in the study.

The chi-square was used to test for differences between and within variables. The chi-square is a non-parametric test used to determine the differences in two categorical variables. It is the most frequent test used for verifying distribution in social research. The chi-square value is used to determine whether the hypothesis formulated at the

beginning of the study should be accepted or rejected. If the chi-square value is less than the critical value, the null hypothesis is accepted, and then the difference is not significant (Sarantakos, 1993). When $p \leq 0.05$ it is considered significant and when $p > 0.05$ it is considered not significant. Also, the main reasons for these tests were to enable the researcher to answer the questions. These reasons justify why the study employed the tests above.

3.6 Summary

The research design adopted for this research was survey and quantitative method was used. The research was undertaken in the Greater Accra Region because it has a lot of second cycle institutions with a number of Senior High Schools running Agricultural Science Program. The population of the study used comprised of agricultural science students in SHS, heads of agricultural science department and guidance and counselling coordinators in schools that offer agricultural science program. A total sample size of 310 students was used for this research. Data were analysed by the Statistical Package for Social Science (SPSS Version 16).



CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter deals in depth with the presentation of the results of this work and discussion of the findings. It considered the extent to which school guidance and counselling services was provided, and how career and guidance sessions influence the choice of agricultural programme at SHS level. The chapter also look at demographic factors and other factors that influence the choice of agricultural programme at the SHS level. The influence of teaching materials on agricultural education and skill development by agricultural students at the SHS level was also examined.

4.1 Components of School Guidance and Counselling Services

Table 4.1 shows the guidance and counselling services provided at SHS level. The data revealed how highly those services are organised and provided in the schools. This can be seen in the high percentage responses by the coordinators. Orientation, introduction of students to school physical environment and new students to teaching personnel commanded 100%. Classroom guidance and counselling sessions with students and career choice, 93.3% as been always provided. It is rare that some of the activities were not provided. In some cases, it is sometimes, such as individual counselling, 73.3%, personal (family) problem, 46.7% and explanation of secondary school curriculum to students, 40%.

Table 4.1 Guidance and Counselling Services Provided by Coordinators.

Guidance and Counselling Services	Degree of influence	Frequency	Percentage (%)
Guidance and Counselling activities	Sometimes	0	0
	Always	15	100
Orientation	Sometimes	0	0
	Always	15	100
Classroom session with students	Sometimes	1	6.7
	Always	14	93.3
Individual Counselling	Sometimes	11	73.3
	Always	4	26.7
Study Skills	Sometimes	2	13.3
	Always	13	86.7
Personal (Family) Problems	Sometimes	7	46.7
	Always	8	53.3
Social (Relationships)	Sometimes	5	33.3
	Always	10	66.7
Career Choice	Sometimes	1	6.7
	Always	14	93.3
Secondary School Curriculum	Sometimes	6	40.0
	Always	9	60.0
Introduction of Students to Physical Environment	Sometimes	0	0
	Always	15	100
Subject Combination	Sometimes	2	13.3
	Always	13	86.7
Introduction of Teachers to New Students	Sometimes	0	0
	Always	15	100

Source: Field Study (2013)

4.2 Demographic Factors and Choosing Agricultural Programme

Demographic characteristics of the respondents as included in the questionnaire has revealed interesting results which need discussing as provided in Table 2 below. Characteristics looked at include gender, age, parent, sibling, religion, ethnic group and Senior High School (SHS).

Sex of students

The sex of the students as to the choice of agricultural program was significantly different, $\chi^2 = 25.6$; $df = 1$; $p = 0.000$ (Table 4.2). This reveals that the sex of the students influences their choice of agricultural program by students at the SHS level. The data shows that greater percentage of the students offering agricultural program, that is 83% as compared to 17% respectively were male (Table 4.2).

Generally, the situation of male dominating the choice of the program can be explained by two factors; socio-cultural factors, such as family expectations, societal images and gender stereotypes, acts as substantial barrier to girls and women's access to education. These restrict access, progression and the type of education that women and men select (Marietta, 2009). The structure of educational institutions also plays a significant role in the education and career choices of girls and boys, men and women, because learning materials, teaching methods and attitudes of teachers are embedded with sets of power relations and gender norms, they often perpetuate gender stereotypes that can limit girls' achievement in the sciences related subject (Asimeng-Boahene, 2006).

Table 4.2 Relationship between demographic factors and choice of agricultural program

Demographic Factors	Influence on Choice of Program						$\chi^2 = 25.6$; $df = 1$; $p = 0.000$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Sex							
Male	197	63.6	59	19.0	256	82.6	
Female	23	7.4	31	10.0	54	17.4	
Total	220	71.0	90	29.0	310	100	

Age of Students

The ages of the students as to the choice of agricultural program at SHS level shows no significant difference, $\chi^2 = 11.849$; $df = 6$; $p = 0.065$ (Table 4.3). This reveals that the age of the students does not influence the choice of agricultural program at the SHS level. Though the data shows that a good number of the student offering agricultural program are of the ages above 16 years, which constitute 76.8% as compared to the closest age bracket 14-16 with 14.5. It does not have any significant bearing on the analysis.

Risk taking in decision making contains an element of uncertainty; judgment and skill can produce high-quality decisions in the face of uncertainty (Wu et al., 2004). These young adults took their decision and chose agricultural program based on the fact that they differ in many ways as compared to elderly people when it comes to risk taking in decision making. According to Trimpop (1994) young adults may not be worried that they may not be able to deal with the possible negative outcomes of their risk. He also accented that, compared to elderly people; young adults may not have degraded ability to make risk taking decisions because they experienced higher anxiety, lower concentration and are unlikely to be distracted by irrelevant information.

Table 4.3 Relationship between demographic factors and choice of agricultural program

Demographic Factors	Influence on Choice of Program						$\chi^2 = 11.849$; df = 6; p = 0.065 Not Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Age of students							
< 14	15	4.8	12	3.9	27	8.7	
14- 16	20	6.4	25	8.1	45	14.5	
> 16	113	36.5	125	40.3	238	76.8	
Total	148	47.7	162	52.3	310	100	

Source: Field Study (2013)

Religion

The religion of the students as to the choice of agricultural program were not significantly different, $\chi^2 = 0.855$; df = 3; p = 0.836 (Table 4.4). This shows that the religion of the students does not necessarily influence the choice of agricultural program by students at the SHS level. Though it shown on the table that the students of Christian background are more than Moslem, 254 as against 51, but does not influence the choice of agricultural program.

Table 4.4 Relationship between demographic factors and choice of agricultural program

Demographic Factors	Influence on Choice of Program						$\chi^2 = 0.855$; df = 3; p = 0.836 Not Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Religion							
Christianity	91	29.3	24	7.7	115	37.0	
Islamic	75	24.2	22	7.1	97	31.3	
Traditionalist	32	10.3	25	8.6	57	18.9	
Others	22	7.1	19	6.1	41	13.2	
Total	220	71.0	90	29.0	310	100	

Source: Field Study (2013)

Parents

Parents in reference to the choice of Agricultural program at SHS level has shown significant difference $\chi^2 = 4.78$; $df = 1$; $p = 0.029$ (Table 4.5). This reveals that parents did influence students in their choice of the program at SHS level. The data shows that a greater percentage of the students were influenced by their parents in the choice of the program that is, 71% as against 29%.

Navin (2009) found that college students and young adults cite parents as an important influence on their choice of career. Parents want their children to be successful in life. They hope to one day see them in satisfying careers with the promise of growth. The thought of seeing their children in dead-end jobs may be saddening. Parents wonder, though, if there is anything they can do to help ensure that the children are successful. Families, parents and guardians in particular (Taylor, Harris and Taylor, 2004), play a significant role in the occupational aspirations and career goal development of their children.

Table 4.5 Relationship between demographic factors and choice of agricultural program

Demographic Factors	Influence on Choice of Program						$\chi^2 = 4.78$; $df = 1$; $p = 0.029$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Parents							
Father	120	38.7	62	20	182	58.7	
Mother	100	32.3	28	9.0	128	41.3	
Total	220	71.0	90	29.0	310	100	

Source: Field Study (2013)

Household Size of Students

The household size of the students on the choice of agricultural program at SHS level has shown significant difference, $\chi^2 = 30.429$; $df = 6$; $p = 0.000$ (Table 4.6). This reveals that the household size of the students does influence the choice of agricultural program by students. The data shows that greater percentage of the students offering agricultural program are from household size bracket (4-6), that is 56% as compared to (32%) and (11%) to household size 7 and above and 1-3 respectively (Table 4.6).

It should be pointed out however, that though the students in the household size bracket 4-6 were more than the others, it does not result in that educational attainment. This has been proved in many studies from developed countries that showed negative correlation between family size and children's schooling, while results from developing countries show association ranging from positive to neutral to negative, depending on the context (Steelman et al., 2002). Buchmann and Hannum (2001) have also pointed out that, the relationship between family sizes and children's schooling can differ within the same country and change over time as contextual factors evolved with socio-economic development.

Table 4.6 Relationship between demographic factors and choice of agricultural program

Demographic Factors	Influence on Choice of Program						$\chi^2 = 30.492$; df =6; p =0.000 Significant
	Yes		No		Total		
	N	%	N	%	N	%	
House Hold size							
1-3	23	7.4	10	3.2	33	10.6	
4-6	156	50.3	19	6.1	175	56.4	
7 and above	96	31.0	6	1.9	102	32.9	
Total	275	89.0	35	11.0	310	100	

Source: Field Study (2013)

Ethnic Group

The ethnic group of the students in reference to choice of agricultural program showed no significant difference, $\chi^2 = 7.734$; df = 9; p = 0.561 (Table 4.7). This indicates how the ethnicity of the students does not necessarily influence the choice of agricultural program at that level. The data also show that Akans and Gas dominated the students offering the program.

Table 4.7 Relationship between demographic factors and choice of agricultural program

Demographic Factors	Influence on Choice of Program						$\chi^2 = 7.734$; df = 9; p = 0.561 Not Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Ethnicity							
Ga- Adangbe	62	20.0	24	7.7	72	23.2	
Akan	72	23.2	22	7.1	94	30.3	
Fante	48	15.5	23	7.4	85	27.4	
Ewe	38	12.3	21	6.8	59	19.1	
Total	220	71.0	90	29.0	310	100	

Source: Field Study (2013)

4.3 To assess the relationship between guidance and counselling sessions and the choice of agricultural program at the SHS level.

Study Skills

Study skills provided through guidance and counselling service to students showed a significant difference, $\chi^2 = 7.132$; $df = 2$ $p = 0.028$ (Table 4.8). This has shown that study skills provided during guidance and counselling sessions influenced students' choice of agricultural program at the SHS level. The data also indicate that majority of the students responded in affirmative that study skills provided during guidance and counselling sessions influenced their choice of the program that is 68.7% as against 31.3%. This result stems from what Popham (2010) stated concerning guidance and counselling on study skill that it will enable learners to define values, discover abilities, extend interests, learn skills, and apply techniques.

Table 4.8 Influence of Guidance and Counselling on Choice of Agricultural Program

Guidance and Counselling	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
Study Skills							$\chi^2 = 7.132$; $df = 2$; $p = 0.028$ Significant
Low	25	8.1	18	6.0	43	14.1	
Moderate	71	23.0	19	6.1	90	29.1	
High	117	38.0	60	19.4	177	57.4	
Total	213	68.7	97	31.3	310	100	

Source: Field Study (2013)

Subject Combination

Subject combination as provided by guidance and counselling does not show significant difference, $\chi^2 = 4.270$; $df = 2$; $p = 0.118$ (Table, 4.9). This is an indication that subject combination discussed during guidance and counselling session does not influenced students' choice of agricultural program at this level. Though the data shows majority of the students responding in the affirmative, especially in the case where 150 students thus 48% from the sampled were highly in favour of being influenced, this was insignificant when statistically analysed.

Table 4.9 Influence of Guidance and Counselling on Choice of Agricultural Programme

Guidance and Counselling	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
Subject Combination							$\chi^2 = 4.270$; $df = 2$; $p = 0.118$ Not Significant
Low	17	5.5	15	4.8	32	10.3	
Moderate	46	14.8	17	5.5	63	20.3	
High	150	48.4	65	21.0	215	69.4	
Total	213	68.7	97	31.3	310	100	

Source: Field Study (2013)

Career Choice

Career choice as provided through guidance and counselling session as to the choice of agricultural program show a significant difference, $\chi^2 (2, N=310) = 11.605$, $p = 0.003$ (Table 4.10). This reveals that guidance and counselling on career choice had a significant influence on students' choice of agricultural program. The data also showed majority of the students responded in affirmative that career guidance provided during

guidance and counselling sessions influenced their choice of the program, students representing 68.7% as against 31.3%.

Table 4.10 Influence of Guidance and Counselling on Choice of Agricultural Programme

Guidance and Counselling	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
Career choice							$\chi^2 = 11.605$; $df = 2$; $p = 0.003$ Significant
Low	16	5.2	20	6.5	36	16.5	
Moderate	46	14.8	15	4.8	61	19.6	
High	151	48.7	62	20.0	213	68.7	
Total	213	68.7	97	31.3	310	100	

Source: Field Study (2013)

School Curriculum

The details of the school curriculum provided through guidance and counselling do not show significant difference, $\chi^2 = 5.306$; $df = 2$; $p = 0.070$ (Table 4.11). This indicates that school curriculum orientation provided through guidance and counselling does not necessarily influence students' choice of agricultural program. The data has shown though that a greater number of students responded in affirmative to school curriculum influencing students' choice of the program, thus 213 students representing 69% as against 97 which consist of 31%. But this was insignificant when statistically analysed. The reason for this outcome is as a result of students knowing much about the program and since most of them made the choice on their own after they have had career guidance.

Table 4.11 Influence of Guidance and Counselling on Choice of Agricultural Programme

Guidance and Counselling	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
School Curriculum							$\chi^2 = 5.306$; df = 2; p = 0.070 Not Significant
Low	34	11.0	17	5.5	51	16.5	
Moderate	33	11.0	25	8.1	58	19.1	
High	146	47.1	55	18.0	201	65.1	
Total	213	68.7	97	31.3	310	100	

Source: Field Study (2013)

Physical Environment

The school’s physical environment shows a significant difference, $\chi^2 = 76.870$; df = 2; p = 0.000 (Table 12). This indicates that the school physical environment did influence students’ choice of agricultural program. On the data, it was revealed that majority of the students’ sampled alluded to the fact that the physical environment of the school did influence their choice of the program. That is, 69% as compared to 31%. This is assumed that the environment and for that matter the course agricultural science could be taken and skill developed.

Table 4.12 Influence of Guidance and Counselling on Choice of Agricultural Programme

Guidance and Counselling	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
Physical Environment							$\chi^2 = 76.870$; df = 2; p = 0.000 Significant
Low	19	6.1	19	6.1	38	12.2	
Moderate	43	14.0	13	4.2	56	18.2	
High	151	48.7	65	21.0	216	69.7	
Total	213	68.7	97	31.3	310	100	

Source: Field Study (2013)

4.4 To examine the influence of other factors on the choice of Agricultural program

Teaching Personnel

The choice of agricultural program by students with regard to teaching personnel showed no significant difference, $\chi^2 = 5.764$; $df = 2$ $p = 0.066$ (Table 4.13). This reveals that teaching personnel do not necessarily influence students' choice of agricultural program at the SHS level. The data also revealed that out of 69% of students who responded to be influence in their choice of program quite apart from guidance and counselling, 47% were of the view that teaching personnel do not influence their choice of the program.

Table 4.13 The influence of other factors on the Choice of Agriculture Program

Other Factors	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
Teaching Personnel							$\chi^2=5.764$; $df= 2$; $p = 0.066$ Significant
Low	103	33.2	33	10.6	136	43.8	
Moderate	37	11.9	18	5.8	55	17.7	
High	74	23.9	46	14.8	120	38.7	
Total	214	69.0	96	31.0	310	100	

Source: Field Study (2013)

Personnel in Agro-business

People in the agro-business showed a significant difference, $\chi^2 = 8.069$; $df = 2$; $p = 0.018$ (Table 4.14). This has shown that people in the agro-business influenced the choice of agricultural program by the students. The data also indicate that quite a good number of students responded in the affirmative that, people in the agro-business influenced their choice, 69% as compared to 31%.

Table 4.14. The influence of other factors on the Choice of Agriculture Program

Other Factors	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
Personnel in Agro-business							$\chi^2 = 8.069$; df = 2; p = 0.018 Significant
Low	4	1.3	34	11.0	38	12.3	
Moderate	59	19.0	26	8.4	85	27.4	
High	150	48.4	37	11.9	187	60.3	
Total	213	68.7	97	31.3	310	100	

Source: Field Study (2013)

Job Market

From the data, job market as a variable showed a significant difference, $\chi^2 = 20.429$; df = 2; p = 0.000 (Table 4.15). This indicates that the job market did influenced student choice of agricultural program. The data also revealed that most of the students responded in the affirmative that the job market influenced their choice of agricultural program, 69% against 31%.

Table 4.15 The influence of other factors on the Choice of Agriculture Program

Other Factors	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
Based on Job Market							$\chi^2 = 20.429$; df = 2; p = 0.000 Significant
Low	34	11.0	32	10.3	66	21.3	
Moderate	22	7.1	19	6.1	41	13.2	
High	157	50.6	46	14.8	203	65.4	
Total	213	69.0	97	31.3	310	100	

Source: Field Study (2013)

BECE Result

The BECE is administered and graded by WAEC and it is admission requirement to the SHS. As a variable it showed significant difference, $\chi^2 = 27.463$; $df = 2$; $p = 0.000$ (Table 4.16). This shows that the result from BECE influenced the students' choice of agricultural program. The data has also shown that majority were of the view that the results from BECE influenced their choice of agricultural program, 68.7%. This result can be explained in either way, that their aggregates obtained is good for the program or it does not qualify them to enrol for other programs.

Table 4.16. The influence of other factors on the Choice of Agriculture Program

Other Factors	Influence on Choice of Program						
	Yes		No		Total		
	N	%	N	%	N	%	
BECE Result							$\chi^2 = 27.463$; $df = 2$; $p = 0.000$ Significant
Low	39	12.6	39	12.6	78	25.2	
Moderate	10	3.2	14	4.5	24	7.7	
High	164	52.9	46	14.8	210	67.7	
Total	214	68.7	97	31.3	310	100	

Source: field (2013)

Stepping Stone

At this level of education in Ghana, many cannot be sure of their career till they get to the tertiary institutions. Therefore, some students read courses that can get them into a tertiary institution. And that form a stepping stone for them. Result on the statistical table showed a significant difference, $\chi^2 = 16.475$; $df = 2$; $p = 0.000$ (Table 4.17). For ($p = 0.000$) indicates a significant influence on the choice of agricultural program by the students. The data show that majority of the student respondents agreed to offer the program with the assumption of using it as stepping stone. From the data, 56% were highly influenced by using the program as a stepping stone.

Table 4.17 The influence of other factors on the Choice of Agriculture Program

Other Factors	Influence on Choice of Program						$\chi^2 = 16.475$; $df = 2$; $p = 0.000$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
As a Stepping Stone							
Low	29	9.4	28	9.0	57	18.4	
Moderate	9	2.9	10	3.2	19	6.1	
High	175	56.5	59	19.0	234	75.5	
Total	214	68.7	97	31.3	310	100	

Source: field (2013)

Career Guidance

Career guidance as used as one of the variables of other factor that influences the choice of agricultural program at SHS level showed a significant difference, $\chi^2 = 8.520$; $df = 2$; $p = 0.014$ (Table 4.18). This indicates that career guidance is one of the factors that influence students' choice of agricultural program at SHS level. The data has also shown most of the students responded affirmatively to career guidance as a factor that influence their choice of the program. From the data, 53% were highly optimistic that career guidance influenced their choice. This has much being explained under career choice on Table 4.10

Table 4.18 The influence of other factors on the Choice of Agriculture Program

Other Factors	Influence on Choice of Program						$\chi^2 = 8.520$; $df = 2$; $p = 0.014$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Career Guidance							
Low	23	7.4	20	6.5	43	13.7	
Moderate	25	8.1	17	5.5	42	13.6	
High	165	53.2	60	19.4	225	72.6	
Total	213	68.7	67	31.3	310	100	

Source: Field Study (2013)

As indicated on (Table 4.19), the statistical analysis of perception of Heads of Agricultural Science on other factors that influence students' choice of agricultural program showed no significant difference to most of the variables in exception of, using the agricultural program as a stepping stone and based on CSSPS.

From the data, teaching personnel of the program as other factors influencing students' choice show no significant difference, $\chi^2 = 4.848$; $df = 6$; $p = 0.563$. The data also revealed ($\chi^2 = 4.115$, $p = 0.661$) for people in the agro-business, ($\chi^2 = 5.056$, $p = 0.537$) for influence of job market, ($\chi^2 = 2.847$, $p = 0.416$) for cultural background, ($\chi^2 = 5.056$, $p = 0.537$) for sex and based on BECE results ($\chi^2 = 0.577$, $p = 0.997$). The $p > 0.05$ in these variables show no significant difference as factors that influenced the choice of agricultural program by students. This is contrary to some of the results revealed on (Table 4.4) as there was some significant difference in some of the variables. The insignificant difference of these variables could be by chance as the difference in the n values. That is, the numbers of student respondents are more than the number of Heads of Departments.

However, using the program as a stepping stone, showed significant difference, $\chi^2 = 15.682$, $p = 0.016$. This has confirmed what (Table 4.17) shown on students' affirmation of using the program as stepping stone. The data has also revealed CSSPS showing significant difference, $\chi^2 = 15.000$, $p = 0.002$. Based on the perception of the Heads of Agricultural Science department, students' offering the program was as a result of CSSPS.

Table 4.19 Perception Heads of Departments of Agricultural Science on other factors influencing choice of Agricultural Program.

Other factors	Degree of Influence	Choice of Agric. program				Statistical Significance
		Own	Parent	School Authority	Others	
Teaching Personnel of program	Never	9	1	0	1	$\chi^2 = 4.848$; df = 6; p = 0.563
	Sometimes	1	0	0	0	
	Always	2	0	1	0	
People in agro-business	Never	4	0	1	1	$\chi^2 = 4.115$; df = 6; p = 0.661
	Sometimes	7	1	0	0	
	Always	1	0	0	0	
Based on job market	Never	3	0	1	1	$\chi^2 = 5.056$; df = 6; p = 0.537
	Sometimes	1	0	0	0	
	Always	8	1	0	0	
Cultural Background	Never	5	0	1	0	$\chi^2 = 2.847$; df = 6; p = 0.416
	Sometimes	0	0	0	0	
	Always	7	1	0	1	
Based on gender	Never	8	1	0	0	$\chi^2 = 5.056$; df = 6; p = 0.537
	Sometimes	1	0	0	0	
	Always	3	0	1	1	
Based on BECE results	Never	1	0	0	0	$\chi^2 = 0.577$; df = 6; p = 0.997
	Sometimes	1	0	0	0	
	Always	10	1	1	1	
As a Stepping Stone	Never	0	0	0	1	$\chi^2 = 15.682$; df = 6; p = 0.016
	Sometimes	3	0	0	0	
Based on CSSPS	Never	0	0	0	1	$\chi^2 = 15.000$; df = 6; p = 0.002
	Sometimes	0	0	0	0	

Source: Field Study (2013)

4.5 To examine the influence of teaching materials on agricultural education and skill development by agricultural students at the SHS.

Pest and disease control skill

Pests and diseases have the capacity of destroying farm crops to the extent that yields will become very low. Pest and disease control skill which is normally developed during practical activities in agricultural education show significant difference in terms of skill development, $\chi^2 = 7.132$; $df = 2$; $p = 0.028$ (Table 4.20). This show that school garden and farm inputs does contribute to students' development of pest and disease control skills. The data also revealed that most of the students being affirmative that their skill in pest and disease control was enhanced by the school garden and farm inputs. That is 89.4% as against 10.6% of the sampled students. This could be explained as students taking their practical activities seriously and has really boosted that skill development. Also as noted by (Reason, Terenzini and Domingo, 2006), that students are shaped by their experiences and personal characteristics, these experiences were demonstrated through experiential learning in relation school garden and the use of garden tools. This is what might have resulted in the development of pest and disease controlling skills that the students attested to.

Table 4.20 Relationship between teaching material on agricultural education and skill development

Skill Development	Teaching Materials						$\chi^2 = 7.132$; $df = 2$; $p = 0.028$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Pest and disease control							
Low	15	4.8	14	4.5	29	9.3	
Moderate	70	22.6	7	2.3	77	24.9	
High	192	61.9	12	3.9	204	65.8	
Total	277	89.4	33	10.6	310	100	

Source: Field Study (2013)

Planting and Harvesting Skill

Planting and harvesting are very important activities when it comes to cultivation of crops. These activities are carried out on the farm or in gardens when it comes to agricultural educational certain. From Table 4.21, 80% compared to 20% of students affirm on farm inputs impacting on their development of planting and harvesting skills. The result from a statistical analysis show a significant difference, $\chi^2 = 30.023$; $df = 2$; $p = 0.000$ (Table 4.21). This revealed the significance school garden and farm inputs which have impacted on planting and harvesting skill of students. The data also show 54% which is half the sampled students were highly of the view that their planting and harvesting skill was impacted upon by the necessary school garden and farm inputs. Seaman Knapp wrote “What a man hears, he may doubt; what he sees, he may also doubt, but what he does, he cannot doubt” (International Adult & Continuing Education Hall of Fame, 1997). Learning by doing is a common descriptor of experiential learning. Learning by doing, learning in real-life context, learning through projects, and learning by solving problems are what Knobloch (2003) calls the four pillars of experiential learning in agricultural education.

Table 4.21 Relationship between teaching material on agricultural education and skill development

Skill Development	Teaching Materials						$\chi^2 = 30.023$; $df = 2$; $p = 0.000$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Planting and Harvesting skill							
Low	12	3.9	17	5.5	29	9.4	
Moderate	66	21.3	11	3.5	77	24.8	
High	120	54.8	34	10.9	204	65.7	
Total	248	80.0	2	20.0	310	100	

Source: Field Study (2013)

Fertiliser Application Skill

Fertiliser application as a skill learnt showed a significant difference between teaching materials or resources and skill development, $\chi^2 = 11.605$; $df = 2$; $p = 0.003$ (Table 4.22). This revealed that school garden and farm inputs did significantly impact on the development of fertiliser application skills. The data also shows that majority of the students 80% as against 20% attesting that the teaching materials enhanced their skill development in fertilizer application. Still on (Table 4.6), 66% of students were highly optimistic that their fertiliser application skill was impacted upon by the necessary farm input. And the percentage is more than half of the sampled student respondents.

Incorporating these tools and materials present, support and reinforce teaching (Aduwa-Ogiegbaen and Imogie, 2005). By effective use of the necessary farm inputs, students were able to identify that, indeed these resources and materials influenced the development of fertilizer application skills.

Table 4.22 Relationship between teaching material on agricultural education and skill development

Skill Development	Teaching Materials						$\chi^2 = 11.605$; $df = 2$; $p = 0.003$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Fertilizer Application skill							
Low	19	6.1	17	5.5	36	11.6	
Moderate	8	2.3	35	11.3	43	13.6	
High	223	71.9	8	2.3	231	74.2	
Total	250	80.6	60	19.4	310	100	

Source: Field Study (2013)

Record Keeping

Record keeping which is a skill acquired in the study of science and for that matter agricultural science did not show significant difference as a result of teaching materials or resources, $\chi^2 = 5.306$; $df = 2$ $p = 0.070$ (Table 4.23). This indicates that teaching material do not make an impact on students' record keeping development skill. From the data, it could be seen that majority of the students 86% as against 14% have their development of record keeping skill developed by teaching materials or resources. But ironically, when the result was subjected to statistical analysis ($p > 0.070$), it showed no significant difference between learning resource or material and the development of record keeping skills.

Table 4.23 Relationship between teaching material on agricultural education and skill development

Skill Development	Teaching Materials						$\chi^2 = 5.306$; $df = 2$; $p = 0.070$ Not Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Record Keeping							
Low	23	7.4	9	2.9	32	10.3	
Moderate	103	33.2	15	4.8	118	38.0	
High	140	45.2	20	6.5	160	51.7	
Total	266	85.8	44	14.2	310	100	

Source: Field Study (2013)

Leadership Skill

Leadership skill show a significant difference, $\chi^2 = 76.870$; $df = 2$; $p = 0.000$ (Table 4.24). This reveals that agricultural laboratory and store as resources has helped students in the development of their leadership skill. As shown by the data, majority of

the students 86% compared to 14% admitted to the fact that the laboratory and store enhanced their leadership skill development. Reason for this development might be as a result of the students working in groups and being allowed to practice the following roles; build and manage teams, create an environment where colleagues are able to give and receive feedback, communicate and listen, delegate responsibility to others when possible, be a mentor to others, as well as seeking his or her own mentors and make fair decisions and manage conflicts (O’Neil, 1999).

Table 4.24 Relationship between teaching material on agricultural education and skill development

Skill Development	Teaching Materials						$\chi^2 = 76.870$; $df = 2$; $p = 0.000$ Significant
	Yes		No		Total		
	N	%	N	%	N	%	
Leadership skill							
Low	21	6.8	11	3.5	32	10.3	
Moderate	73	23.5	15	4.8	88	28.3	
High	172	55.5	18	5.8	190	61.3	
Total	266	85.8	44	14.2	310	100	

Source: Field Study (2013)

Decision Making Skill

As explained by Gigerenzer (2010), decision-making is a basic cognitive process of human behaviours by which a preferred option or a course of action is chosen from among a set of alternatives based on certain criteria. Decision making skill does not show a significant difference in terms of development of agricultural skills, $\chi^2 = 1.595$; $df = 2$; $p = 0.450$ (Table 4.25). This information has indicated that teaching material or resources does not influence or enhanced students’ development of decision making skill. On table 4, majority of the students 85.8% as against 14.2%, were in the category

of teaching material or resources having impact on their decision making skill development. However, when statistically analysed, ($p > 0.450$) there was no significant difference between the impact of teaching materials or resources on acquisition of decision making skill. Reason might be that in the laboratory, rules and regulations are followed and instructions directly given by the teacher, thus making limited room to take personal decisions.

Table 4.25 Relationship between teaching material on agricultural education and skill development

Skill Development	Teaching Materials						
	Yes		No		Total		
	N	%	N	%	N	%	
Decision Making Skill							$\chi^2 = 1.595$; $df = 2$; $p = 0.450$ Not Significant
Lows	87	28.1	18	5.8	108	33.9	
Moderate	68	21.9	8	2.3	76	24.2	
High	111	35.8	18	5.8	129	41.6	
Total	266	85.8	44	14.2	310	100	

Source: Field Study (2013)

4.6 Summary

The results have shown that quite a number of guidance and counselling services are being provided by the counselling coordinators in the schools. Among the services provided study skills, career choice and introduction to physical environment show significant difference in the students' choice of Agricultural programme. Some demographic variables such as sex, parents and house hold size show significant difference in the choice of Agricultural program. Other factors including personnel in the agro-business, job market, BECE result and using the programme as a stepping stone also influenced the students' choices. It is evidently clear from the result that teaching and learning materials significantly influence agricultural skill development.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the study, presents the salient findings and concisely presents the conclusions that were made as a result of the study. Below is a recap of the research questions:

- i. To what extent do demographic factors influence the choice of agricultural program?
- ii. To what extent do career and guidance sessions influence the choice of agricultural programs at the SHS?
- iii. To what extent do teaching materials influence agricultural education and skill development by agricultural students at the SHS?

To answer the above questions, the following objectives were set:

- i. To examine how demographic factors influence the choice of agricultural program.
- ii. To assess the relationship between guidance and counselling sessions and the choice of agricultural program at the SHS level.
- iii. To examine the relationship between ‘the use of teaching material on agricultural education’ and skill development by agricultural students at the SHS.

5.1 Literature review

To achieve the above objectives, literature was reviewed, starting with the theoretical perspectives of choice of a career. A conceptual framework on agricultural education

and choice of agriculture as a subject was examined. Further, literature was reviewed on education systems in Ghana, Guidance and counselling, and teaching and learning materials.

5.2 Methodology

The survey design, using quantitative method was employed. Both primary and secondary data were used in this study. Two sources of primary data were questionnaire and interview with guidance and counselling coordinators and heads of agricultural science department. Random sampling techniques were employed to get a representative sample of students from the various schools. The guidance and counselling coordinators and the heads of agricultural science department were totally sampled due to the schools involved. Pre-tested questionnaires were administered. Secondary data was also obtained from documentary sources. In analysing the data, descriptive statistics involving percentages and chi-square were used for the quantitative data.

5.2 Conclusion

The study found among others that very few schools have agricultural program running in their schools, and the number of students offering the program is low as compared to other programs run in the various schools. This cannot be attributed to inadequate number of Agricultural teachers neither a place to establish a garden, because some schools visited which not offering the program have enough space to support their practical work. Based on the evidence that the number of schools running agricultural science program are less in the region, the number of students offering Agricultural

program are also very low in terms of ratio as compared to students offering other programs in the various schools. This is in contrast to what the general aim of agricultural education sort to do by developing in the young better citizenship, to appreciate agriculture as part of their everyday live, motivate them to take job opportunities in agriculture, including farming as a career and to appreciate the importance of agriculture in the socio-economic development.

An examination of demographic factors showed that some influenced the choice of Agricultural program at SHS, showing significant difference. Among these demographic factors are sex, parents, household size and the level of students. Parents proved to have a high significant difference. This stem from the fact that parents will want their children to be in the right career.

The study has shown that guidance and counselling sessions have a very important role to play in educating the young. The purpose of SGC is to: find out and make individuals aware of their basic personal prerequisites, abilities, assets, liabilities and potentialities. It is also to assist students in making appropriate and satisfying personal, vocational and educational choices and assist student acquire a positive image of self through self-understanding the needs and problems of each person. In the study it has been proved that SGC is a major contributor to the choice of agricultural program by the students. Students were presented with five areas both from their orientation and other counselling services, that is, study skills, subject combination, career choice, introduction to secondary school curriculum and the physical environment of their school whether that influences their choice of agricultural program. Study skills, career

choice and introduction to the schools' physical environment proved significant in the choice of agricultural program.

It should be pointed out that among the several possible areas such as teaching personnel, people in the agro-business industry, the job market, BECE results, as a stepping stone, career guidance and adequate funds for practical activities, could influence the choice of agricultural program at SHS level. When these factors were statistically analysed, they show significant difference except teaching personnel and adequate funding.

The study revealed that most of the teaching material or resources needed in running agricultural science program are in adequate supply in the various schools. In the development of skills which is an important aspect of agricultural education at this level. Teaching materials or resources proved significant in the development of skills by students. Pests and diseases control, planting and harvesting, fertiliser application and leadership skill showed significant difference. This proves how important teaching materials or resources are very significant in agricultural education to enable students develop the requisite skills for future endeavours.

The results of the study indicated that the choice of agricultural program at SHS level was significantly influenced by most of the demographic factors, SGC and teaching and learning materials leading to development of skills under agricultural education.

5.4 Recommendation

Based on the findings of this study, the following recommendations are made:

- Guidance and counselling should be made effective at the JHS level as well to get pupil informed about what pertain at the SHS level concerning career choice.
- More SHS should be encouraged to add agricultural program to their already run programs.
- Adequate teaching materials should be provided to enable students develop the requisite skills to meet the job market or even become self-employed.



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APPENDICES

Appendix 1: Students questionnaire

UNIVERSITY OF GHANA-LEGON
COLLEGE OF AGRICULTURE AND CONSUMER SCIENCE
DEPARTMENT OF AGRICULTURAL EXTENSION

QUESTIONNAIRE ON RELEVANCE OF AGRICULTURAL EDUCATION
IN THE SECOND CYCLE LEVEL OF EDUCATION IN THE GREATER
ACCRA REGION

STUDENTS' QUESTIONNAIRE

This survey is for academic purpose only. All information collected in this study will be treated confidentially. At no time will the name of any school or individual who responded to the instrument be identified. There are no right or wrong answers. I am only interested in your own opinions. Please use a writing pen or ballpoint to write your answers. Indicate your response by a tick (✓) against the appropriate box at each question.

PART I-BACKGROUND INFORMATION

1. Sex: (a) Male () (b) Female ()
2. Age: (a) 14yrs () (b) 15year () (c) 16yrs () (d) Over 17yrs ()
3. Form/Level:
(a) Form 1 () (b) Form 2 () (c) Form 3 () (d) Form 4 ()
4. Indicate your ethnic Affiliation:
5. Number of people in your nuclear family:
6. Religious Affiliation:
(a) Christianity () (b) Islam () (c) Traditional () (d) Hindu () (e) Hari Krishna () (f) Others (specify)

PART II-CHOICE OF AGRICULTURAL PROGRAMME

A. Demographic factors

7. Where you influenced by any of the factors listed below in the choice of the program?

Please use Yes or No. Y = 1, N = 0.

Factors	Y = 1	N = 0
Sex		
Male		
Female		
Age of Students		
<14		
14 - 16		
>16		
Religion		
Christianity		
Islamic		
Traditionalist		
Others		
Parents		
Father		
Mother		
House Hold Size		
1-3		
4-6		
7 and above		
Ethnic Group		
Ga-Adangbe		
Akan		
Fante		
Ewe		

8. How did you choose to do the Agricultural programme? Please tick those that applies (a) Own () (b) Parents () (c) School Authorities () (d) Others (specify)
9. If on your own, were you in any way influence by someone before you made that choice? A) Yes () b) No ()
10. If yes, indicate the various factors that influenced your choice of the agricultural programme. 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

Statement	1	2	3	4	5
9a. Teaching personnel					
9b. People in the Agro-business Industry					
9c. Students choose the programme base on the job market					
9d. Cultural background					
9e. Gender					
9f. BECE Results					
9g. Use the programme as a stepping stone					
9h. Through career guidance					

10. If by any other of influence please specify.....

PART III -COMPONENT OF SCHOOL GUIDANCE AND COUNSELLING SERVICES

Counselling Services

12. Does your school hold an orientation programme for all new students? (a) Yes () (b) No ()
13. How often does your School's Counselling Service provide the following information to students? On a scale of 1 to 2, show the level at which the following services are offered. 1=Sometimes, 2=Always

Information	1 = Sometimes	2 = Always
-------------	---------------	------------

13a. Educational (Study Skills)		
13b. Personal (Family Problems)		
13c. Social (Relationships)		
13d. Occupational (Choosing careers)		

14. If your school has an orientation service, how often does the service provide each of the following services? On a scale of 1 to 2, please rank your response. 1=Sometimes, 2=Always

Activity	1 = Sometimes	2 = Always
14a. Introduce students to the school's physical environment		
14b. Explain secondary school curriculum to students		
14c. Assist students with career choice		
14d. Assist students with study skills		
14e. Introduce teachers to new students		
14f. Organise open days		
14g. Assist students with subject combination		
14h. Assist students with social relationships		



15. To what extent do the following counselling services influence your choice of agricultural programme? Indicate your level of opinion on a scale of 1 to 3, where 1= Low, 2= Moderate, 3= High, 4. Please use Yes or No, Y = 1, N = 0.

Statement	Y = 1	N = 0
15a Introduction of students to the school's physical environment		
Low		
Moderate		
High		
15b Explain secondary school curriculum to students		
Low		
Moderate		
High		
15c Assist students with career choice		
Low		
Moderate		
High		
15d Assist students with subject combination		
Low		
Moderate		
High		
15e Assist students with study skills		
Low		
Moderate		
High		

16. To what extent do the following factors influence your choice of agricultural programme? Indicate your level of opinion on a scale of 1 to 3, where 1= Low, 2= Moderate, 3= High. Please use Yes or No, Y = 1, N = 0.

Statement	Y = 1	N = 0
16a Teaching Personnel		
Low		
Moderate		
High		
16b Personnel in Agro-business		
Low		
Moderate		
High		
16c Job Market		
Low		
Moderate		
High		
16d BECE Result		
Low		
Moderate		
High		
16e Stepping Stone		
Low		
Moderate		
High		
Career Guidance		
Low		

Moderate		
High		

PART IV-TEACHING MATERIALS

17. Please indicate whether the following teaching materials are available in the School?

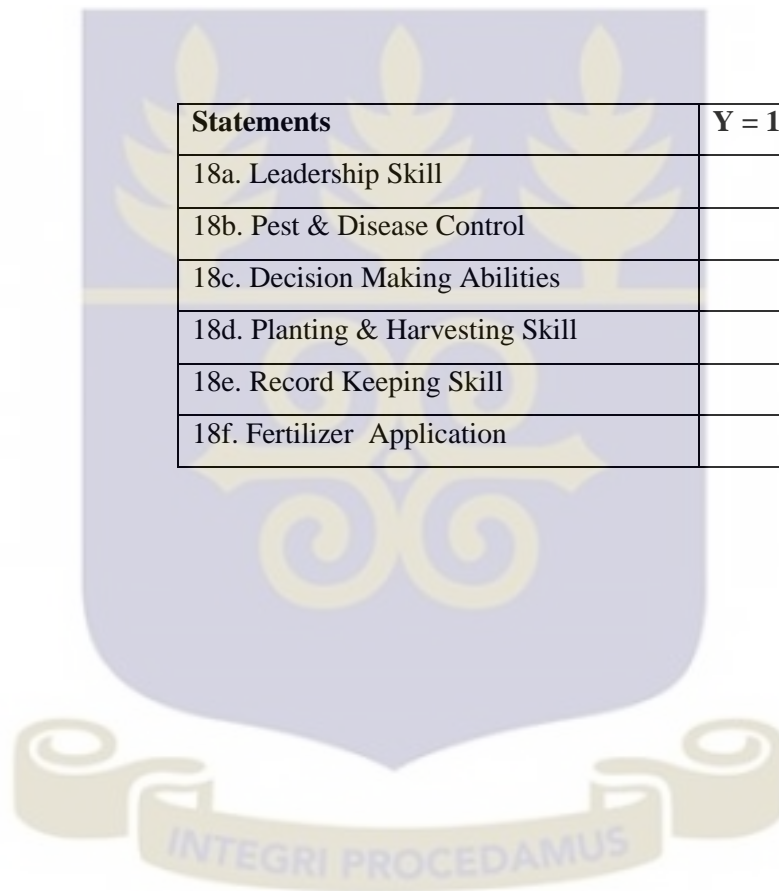
Material	No	Yes
16a. School Garden		
16b. Garden Tools		
16c. Textbooks		
16d. Syllabus		
16e. Laboratory/Store		
16f. Farm inputs		
16g. Human Resource		

18. To what extent are the students allowed to use these teaching materials?

Material	Never	Rarely	Sometimes	Very Often	Always
17a. School Garden					
17b. Garden Tools					
17c. Textbooks					
17d. Syllabus					
17e. Laboratory/Store					
17f. Farm inputs					

PART V-SKILL DEVELOPMENT

19. Do the teaching materials on agricultural education mentioned above influence your development of the following skills? Please use Yes or No, Y =1 N = 0.



Statements	Y = 1	N = 2
18a. Leadership Skill		
18b. Pest & Disease Control		
18c. Decision Making Abilities		
18d. Planting & Harvesting Skill		
18e. Record Keeping Skill		
18f. Fertilizer Application		

20. If yes, to what extents are they influence? Please indicate your level of opinion on a scale of 1 to 3, where 1= Low, 2= Moderate, 3= High.

Statements	Y = 1	N = 2
18a. Leadership Skill		
Low		
Moderate		
High		
18b. Pest & Disease Control		
Low		
Moderate		
High		
18c. Decision Making Abilities		
Low		
Moderate		
High		
18d. Planting & Harvesting Skill		
Low		
Moderate		
High		
18e. Record Keeping Skill		
Low		
Moderate		
High		
18f. Fertilizer Application		
Low		
Moderate		
High		

This is the end of the questionnaire.

Thank you. Your participation in this survey is very much appreciated.

Appendix 2: Questionnaire for Guidance and Counselling Coordinators

**UNIVERSITY OF GHANA-LEGON
FACULTY OF AGRICULTURE AND CONSUMER SCIENCE
DEPARTMENT OF AGRICULTURAL EXTENSION**

**QUESTIONNAIRE ON RELEVANCE OF AGRICULTURAL EDUCATION
IN THE SECOND CYCLE LEVEL OF EDUCATION IN THE GREATER
ACCRA REGION**

QUESTIONNAIRE FOR GUIDANCE AND COUNSELLING PERSONNEL

This survey is for academic purpose only. All information collected in this study will be treated confidentially. At no time will the name of any school or individual who responded to the instrument be identified. There are no right or wrong answers. I am only interested in your own opinions. Please use a writing pen or ballpoint to write your answers. Indicate your response by a tick (✓) against the appropriate box at each question

PART I-BACKGROUND INFORMATION

1. Sex: (a) Male () (b) Female ()
2. Age a) 20-25yrs () b) 26-30yrs () c) 31-35yrs () d) 36-40yrs () e) Over 40yrs ()
3. Professional Qualification: Indicate all that applies
(a) Diploma in Education () (b) Bachelor's Degree ()
(c) Bachelor's Degree in Guidance and Counselling () (d) Master's Degree ()
(e)Others (specify)
4. Marital Status:

- (a) Single () (b) Married () (c) Divorced () (d) Separated () (e) Widowed ()
 5. Experience as a counsellor: a) 1-5yrs () b) 6-10yrs () c) 11-15yrs () d) Over 15yrs ()

6. Teaching Experience:

- (a) 1-5yrs () (b) 6-10yrs () (c) 11-15yrs () (d) Over 15yrs ()

7. Religious Affiliation:

- (a) Christianity () (b) Islam () (c) Traditional () (d) Hindu () (e) Hari Krishna ()
 (f) Others (specify)

8. Ethnic Affiliation:

- (a) Ga () (b) Akan () (c) Ewe () (d) Others (specify)

9. Household Size:

- (a) 1-3 () (b) 4-6 () (c) Over 7 ()

10. Secondary Occupation:

- (a) Trade () (b) Teaching () (c) Entrepreneur () (d) Others (specify)

PART II-COMPONENT OF SCHOOL GUIDANCE AND COUNSELLING SERVICE

Planning

Please tick the appropriate column that best represents your opinion on each of the following statements.

11. To what extent do you do School Guidance and Counselling Services planning at the beginning of every year? a) Never () b) Rarely () c) Sometimes () d) Very Often () e) Always ()

12. To what extent are the following people involved in the planning of your School Guidance and Counselling Services? On a scale of 1 to 5, please rank your response. 1=Never, 2=Rarely, 3=Sometimes, 4=Very Often, 5=Always

Activities	1	2	3	4	5
13a. Headmaster					

13b. Teachers					
13c. Students:					
13d. Parents:					
13e. Education Authorities					

13. To what extent does your School Guidance and Counselling Services plan include each of the following? On a scale of 1 to 5, please rank your response. 1=Never, 2=Rarely, 3=Sometimes, 4=Very Often, 5=Always

Activities	1	2	3	4	5
14a. Guidance and Counselling Activities					
14b. Orientation					
14c. Classroom Sessions with students					
14d. Individual Counselling					
14e. Meeting with Parents					
14f. Administrative Issues					
14g. Resource Required					
14h. Method to be Used					

Counselling Services

14. How often does your School's Counselling Service provide the following information to students?

Information	Never	Rarely	Sometimes	Very Often	Always
15a. Educational (Study Skills)					
15b. Personal (Family Problems)					
15c. Social (Relationships)					
15d. Occupational (Choosing careers)					

Orientation Services

15. Does your school hold an orientation programme for all new students? a) Yes
() b) No ()

16. If your school holds an orientation service, how often does the service provide each of the following services? On a scale of 1 to 5, please rank your response. 1=Never, 2=Rarely, 3=Sometimes, 4=Very Often, 5=Always .

Activity	1	2	3	4	5
17a. Introduce students to the school's physical environment					
17b. Explain secondary school curriculum to students					
17c. Assist students with career choice					
17d. Assist students with study skills					
17e. Introduce teachers to new students					
17f. Organise open days					
17g. Assist students with subject combination					
17h. Assist students with social relationships					

PART IV-TEACHING MATERIALS

17. Please indicate whether the following teaching materials are available in the School?

Statements	No	Yes
18a. School Garden		
18b. Garden Tools		
18c. Textbooks		
18d. Syllabus		
18e. Laboratory/Store		
18f. Farm inputs		
18g. Human Resource		

Thank you. Your participation in this survey is very much appreciated

Appendix 3: Questionnaire for Heads of Department

UNIVERSITY OF GHANA-LEGON
COLLEGE OF AGRICULTURE AND CONSUMER SCIENCE
DEPARTMENT OF AGRICULTURAL EXTENSION

QUESTIONNAIRE ON RELEVANCE OF AGRICULTURAL EDUCATION
IN THE SECOND CYCLE LEVEL OF EDUCATION IN THE GREATER
ACCRA REGION

QUESTIONNAIRE FOR HEADS OF AGRICULTURAL SCIENCE
DEPARTMENT

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PART I-BACKGROUND INFORMATION

11. Sex: (a) Male () (b) Female ()

12. Age a) 20-25yrs () b) 26-30yrs () c) 31-35yrs () d) 36-40yrs () e) Over 40yrs ()

13. Professional Qualification:

(a) Diploma () (b) Bachelor's Degree () (c) Master's Degree () (d)Others (specify)

14. Marital Status:

(a) Single () (b) Married () (c) Divorced () (d) Separated () (e) Widowed ()

15. Teaching Experience:

- (a) 1-5yrs () (b) 6-10yrs () (c) 11-15yrs () (d) Over 15yrs ()

16. Religious Affiliation:

- (a) Christianity () (b) Islam () (c) Traditional () (d) Hindu () (e) Hari Krishna ()
(f) Others (specify)

17. Ethnic Affiliation:

- (a) Ga () (b) Akan () (c) Ewe () (d) Others (specify)

18. Household Size:

- (a) 1-3 () (b) 4-6 () (c) Over 7 ()

PART II- CURRICULUM

19. To what extent do you agree or disagree to the following statements. On a scale of 1 to 5, please rank your response, 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Statement	1	2	3	4	5
9a.The curriculum of agricultural science is well structured to address the policy of the nation					
9b.The curriculum of agricultural science is well structured to suit students learning and understanding					
9c. The topics in the curriculum are practical oriented					
9d. It is possible to complete the topics in stipulated period					
9e. Students are conversant with the syllabus					

PART III- CHOICE OF AGRICULTURAL PROGRAMME

20. How do students arrive at choosing agricultural programme?

- (a) On their own () (b) Parents () (c) School Authority (d) Others (specify)

21. To what extent do the following factors influence the choice of agricultural programme by students? On a scale of 1 to 5, please rank your response, 1= Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Statement	1	2	3	4	5
11a. Teaching personnel of the programme					
11b. The people in the agro-business					
11c. Students choose the programme base on the job market					
11d. Their cultural background					
11e. Based on their gender					
11f. Based on their BECE results					
11g. As a stepping stone					
11h. Because of the Computerised School Selecting and Placement System (CSSPS).					

PART IV- TEACHING MARTHIERIAL

22. Please indicate whether the following teaching materials are available in the school?

Material	No	Yes
12a. School Garden		
12b. Garden Tools		
12c. Textbooks		
12d. Syllabus		
12e. Laboratory/ Store		
12f. Farm inputs		

23. To what extent are students allowed to use the following teaching materials?

Material	Never	Rarely	Sometimes	Very often	Always
13a. School Garden					
13b. Garden Tools					
13c. Textbooks					
13d. Syllabus					
13e. Laboratory/ Store					
13f. Farm inputs					

PART V-SKILL DEVELOPMENT

14. Do the teaching materials on agricultural education mentioned above influence the development of the following skills in students? Please use Yes or No, Y =1 N = 0.

Statement	Y = 1	N = 0
14a. Leadership skill		
14b. Recording keeping skill		
14c. Pest & Disease Control		
14fd. Decision Making Abilities		
14e. Planting 7 Harvesting skill		
14f. Fertilisation Application Skill		

15. If yes, to what extents are they influence? Please indicate your level of opinion on a scale of 1 to 3, where 1= Low, 2= Moderate, 3= High

Statements	Y = 1	N = 2
18a. Leadership Skill		
Low		
Moderate		
High		
18b. Pest & Disease Control		
Low		
Moderate		
High		
18c. Decision Making Abilities		
Low		
Moderate		
High		
18d. Planting & Harvesting Skill		
Low		
Moderate		
High		
18e. Record Keeping Skill		
Low		
Moderate		
High		
18f. Fertilizer Application		
Low		
Moderate		
High		

Thank you. Your participation in this survey is very much appreciated