UNIVERSITY FOR DEVELOPMENT STUDIES (UDS)

FACULTY OF EDUCATION

TEACHER TRAINEE ATTITUDES TOWARDS AGRICULTURAL SCIENCE EDUCATION IN THE UPPER EAST REGION OF GHANA.

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(UDS/MEA/0003/13)

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DECLARATION

I Aurelia Pearl Aduku declare that the work presented in this dissertation with the title "Teacher Trainee attitude towards Agricultural Science Education at the Colleges of Education in the Upper East Region of Ghana" with the exception of various forms of assistance and references to literature which have been duly cited and acknowledge, is a product of my own effort and has not been submitted to any other university of institution of higher learning for the award of any certificate.

Student's Name: AURELIA PEARL ADUKU

Signature……

Date…22/02/2017…

Supervisor's Declaration

I hereby declare that I supervised the preparation and presentation of this project work in accordance with the rules and regulations of the faculty of Education, University for Development Studies (UDS).

Supervisor's Name: Prof. AGNES ATIA APUSIGAH

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Date…28/02/17……

ABSTRACT

The study explored the extent to which gender, parental occupation and courses offered in the senior high school influenced the study of Agricultural Science. It also sought to identify the attitude of students towards Agricultural Science, determine the factors that influenced attitude of students towards the study of Agricultural Science and the possible ways to improve student's interest in Agricultural Science. Convenience sampling technique was employed to draw a sample of 120 respondents for the study. Descriptive cross-sectional survey design and a five- point Likert -type scale questionnaire was used to collect data from respondents in Gbewaa College of Education at Pusiga District and St. John Bosco's College of Education at Navrongo, both in the Upper East Region of Ghana. The results indicated that there was no significant difference in male and female students' attitudes towards the study of Agricultural Science in the colleges. There was also no significant difference in attitude of students with farm background and those without a farm background towards the study of the subject. Again, there was no significant difference in attitude for those who studied Agricultural Science and those who did not study Agricultural Science at the Senior High School level. Thus, the study revealed that the respondents had favourable attitudes towards Agricultural Science in general. However, the lack of teaching learning materials, low motivation, inadequate practical lessons and poor government support were the major factors that influenced student's attitude towards Agricultural Science programme. Thus, the study concluded that Government of Ghana through the Ministry of Education and Ghana Education Service (GES) should help provide teaching and learning resources to our schools to help teachers make lessons interesting and meaningful to students. Also, it has been recommended that Ghana Education Service and its stakeholders in agriculture should embark on a massive campaign to sensitise the general public on the importance of Agricultural Science.

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DEDICATION

This work is dedicated to my beloved children Edwin, Ephraim, Angel and the entire Aduku family.

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CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Agriculture plays a crucial role in any economy of the world. In Ghana, Agriculture does not only provide food and raw materials but also employment opportunities to a very large proportion of the population (Bodybobton, 2011).Agriculture is Ghana's most important economic sector, employing more than half the population on a formal and informal basis and accounting for almost half of GDP and export earnings (Bodybobton, 2011).

In spite of government's efforts to provide food and employment to Ghanaians, unemployment remains a key challenge to most Ghanaians and opportunities for employment in the Agricultural sector remains limited. Past and present governments have shown great concern and interest in the agricultural sector because of its contribution in nation building. For example, the first President, Kwame Nkrumah, in his development planning intended to use agricultural wealth as a springboard for the country's overall economic development. Prompted by food shortages, the late military leader Ignatus Kutu Acheampong, also, in 1972 initiated the 'Operation Feed Yourself' programme, a national programme directed at increasing the production of food crops (The Library of Congress, 1994). Furthermore, when the Rawlings government initiated the first phase of the Economic Recovery programme (ERP) in 1984, agriculture was still identified as the economic sector that could rescue Ghana from financial ruin (The Library of Congress, 1994).

Despite the support from the various governments for the agricultural sector, Ghana's agricultural production is subsistent and smallholder based with low yields

due to the farm size and simple farm tools used. Even for medium and large scale farmers, the use of simple tools like mattock, hoe, axe and cutlass is widespread since most farmers cannot afford mechanized tools aside the over reliance on rainfall instead of irrigation for cultivation (Peasant Farmers Association of Ghana, 2013).

Research suggests that currently there is only one Agricultural Extension Agent to about 1,300 farmers in the country (PFAG, 2013). The Peasant Farmers Association of Ghana (PFAG)finds that the situation is said to be even worse for some districts of the Brong Ahafo and Northern Regions, where one Extension Agent is deployed to offer services to over three thousand farmers. The National President of (PFAG) Peasant Farmers Association, Mohammed Adam Nashiru, said:

> …laudable Government projects like fertiliser and input subsidies will come to naught if agric extension agents, who serve as a link between the ministry and farmers, are not effectively deployed. Poor access to extension services has led to poor agronomic practices, poor post-harvest management, inefficient use of inputs, over-use of pesticides, low adaptive capacity for use of research and technology'' (www.ghanaweb.com 22/05/2015)

Awuku, Baiden, Brese and Ofusu, (1991) indicated that one objective for Agriculture education in the school curriculum is to make teachers and students supplementary extension officers to local farmers. But most students learn Agriculture in the school mainly because it is compulsory or one of the examination requirements (Baffour-Awuah, 1996). The new educational system in Ghana requires that Agricultural Science be taught as a pre-vocational subject at the primary and junior high schools and as a vocational subject at the senior high school level, colleges of agriculture and the Universities (National Policy on Education). But most often Agricultural Science is taught for the acquisition of only knowledge from the basic

school to the tertiary level and mostly, the acquisition of skill is left out. This way of teaching Agricultural Science does not promote knowledge and skills which are necessary for practice and employment in the agricultural sector. Agricultural Science is a practical subject and therefore the delivery of practical agriculture at the senior secondary level and tertiary institutions should not be handled as a science per se but rather as a vocational subject for acquisition of practical agricultural skills for meaningful living (Obi, 2005).

The Upper East Region has two Colleges of Education: St. John Bosco's College of Education located in the Kassena-Nankana Municipality and Gbewaa College of Education in the Pusiga District. Both Pusiga District and Kassena-Nankana Municipality and Gbewaa , are well known for the agricultural activities. Inhabitants of both districts are predominantly livestock and crop farmers. Hence, the offering of Agriculture Science at the two Colleges of Education (CoEs) is a direct reflection of the livelihoods occupations of the local communities. The training of teachers of Agricultural Science is expected to provide professional teachers who can teach the subject effectively.

Thus the role of teachers and teacher trainees should not end in the classroom but be extended to the community in which they live. Teachers can provide formal or informal extension services to farmers in these communities especially that the farmer-extension agent ratio is high as noted above. Teachers can also engage in farming activities to supplement their incomes (Awuku, Baiden, Brese & Ofusu, 1991).

Often, too little attention is paid to providing the types of courses that are important for preparing students as agricultural extension workers who can effectively communicate with diverse rural groups as well as support these groups in a process of

collaborative problem-solving (NRC,1996).The National Research Council (1996) as cited in the work of Wildman and Torres (2001: 46) states that "modern Agriculture is large, complex, diverse and dynamic and colleges of agriculture should reflect these contemporary changes."

According to Adekunle, Oladipo, Adisa and Fataye (2009), about 80 percent of youth residing in rural areas are engaged in agricultural activities and that about 90 percent residing in urban areas are engaged in non-agricultural activities. Also, according to MoFA (2011), there is compelling evidence of ageing farmer population in the country which must be addressed to facilitate sustainability in agriculture production. The average age of farmer in Ghana is 55 years and life expectancy averages between 55 – 60 years. Such an important revelation shows that investing in agricultural development must include young people but also those who teach them. Both the youth and teachers must possess not just knowledge and skills but also the right attitudes toward agriculture. Above all, effective teacher preparation becomes imperative.

Changing students' and teacher's negative attitudes towards learning is a process that involves determining the factors driving the attitude and using the information to bring about change (Workman, 2014). It is also important to effect change at the level of training to forestall negative implementation effects. It is in view of such imperative that this study was conceived. The study therefore seeks to identify the attitudes of teacher trainees towards Agricultural Science as a subject.

1.1 Statement of the Problem

Food security and its relationship to sustainable agricultural and rural development have increasingly become matters of concern for developing countries. While there are many complex factors that influence sustainable development and food security, it is clear that education in agriculture plays an important role in preparing farmers, researchers, educators, and others to make productive contributions in the agricultural sector (Crowder, Williams, Bruening & Doron, 1999). Increased productivity in the agricultural sector depends on the youth who are the majority of Ghana's active population. According to Ghana Statistical Service (2012) the youth form a third (approximately 8219607.66) of Ghana's total population (24,658,823). Their energy and numbers provide tremendous opportunities for increasing agricultural productivity (MoFA, 2001). However there is low societal recognition of Agriculture as it is not counted as one of the noble professions such as Law and Medicine (Ewziem, 2011).

Several studies have also shown a decline in student's enrolment into the Agricultural Science class. For example, Donnermeyer and Kreps (1994) as cited in the works of Wildman and Torres (2001) noted a decline in enrolment at the colleges of Agriculture across the United States during the past years. Baliyan and Nenty (2015) also confirm that the poor interest and declining enrolment in agricultural education has been a major concern. A similar trend is feared to be the case in St. John Boscos College of Education in the Upper East Region of Ghana. Records on enrolment indicate a yearly decline and this is the motivation for this study. Student attitudes have either positive or a negative impact on the various subjects offered in the Colleges of Education. Knowledge of these attitudes is necessary to help tutors

facilitate the learning of agriculture by assisting the students to develop more positive attitudes towards the study of Agricultural Science.

1.2 Research Questions

The research questions guiding the study include:

1. What are some of the attitudes of students towards the study of Agricultural Science?
2. Is there any difference between students' gender and attitudes towards Agricultural Science?
3. What connections exist between the type of parental occupation of students and attitudes towards the study of Agriculture Science?
4. Is there any relationship between the types of courses students pursued in SHS and attitude towards the study of Agriculture Science?
5. What are some of the factors that influence students' attitudes towards the study of Agriculture Science?
6. How might the teaching and learning of Agricultural Science be improved in order to mitigate the attitudinal challenges?

1.3 Research Objectives

The goal of this study is to examine the attitudes of student trainee attitudes towards the study of Agricultural Science in the two Colleges of Education in the Upper East Region of Ghana.

The specific objectives of the study were to:

1. identify some of the attitudes of student trainees towards the study of Agricultural Science.

2. determine the difference between male and female students attitudes towards Agricultural Science
3. determine the connections between the type of parental occupation of students and attitudes towards the study of Agriculture Science.
4. examine the relationship between the types of courses students pursued in SHS and attitude towards the study of Agriculture Science.
5. identify some of the factors that influence students' attitudes towards the study of Agriculture Science.
6. make suggestions for improving student attitudes towards the study of Agriculture Science be improved.

1.4 Significance of the Study

1. Knowledge of students' attitudes is necessary to help tutors in both St. John St.John Boscos and Gbewaa Colleges of Education facilitate the learning of agriculture by assisting the students to develop more positive attitudes towards the study of Agricultural Science.
2. It will help curriculum planners of GES in designing policies and programmes to meet the needs of students and also improve teaching and learning of Agricultural Science in schools.
3. The study will help in providing information to administrators and policy-makers on the importance of funding practical lessons.
4. The information will also help the Ministry of Education, and MoFA to organize workshops to update the knowledge and skills of tutors teaching Agricultural Science.

5. It will also serve as reference material for future researchers who wish to carry out further research work on the subject matter.

1.5 Delimitation

The study is delimited to only St. John Boscos and Gbewaa Colleges of Education in the Upper East Region of Ghana. The study also covers only students and Agricultural Science tutors of St. John Boscos and Gbewaa Colleges of education in the Upper East Region. It is also delimited to the attitude of students towards Agricultural Science in the two Colleges of Education.

1.6 Limitations

1. It was difficult getting the Level 300 student trainees to respond to the questionnaire since they were on the out segment programme.This affected the retrieval rate of the questionnaires administered.
2. The sample size was not representative of the entire college population in the Upper East Region. This limits the generalization of the results over an entire population of Agricultural Science students in Ghana and elsewhere.
3. The statistical test employed to analyse the data (e.g. percentages) had their own inherent limitations and this might have affected the interpretations of results.

1.7 Definition of Terms

Attitude: is our association between an object and our evaluation of it (Myers, 1996,p 130).

Self system: refers to a person's attitude, abilities and cognitive skills (Bandura, 1994).

Integrative motivation: A type of motivation based on learner interest. i.e., to what extend the learner is interested in the subject (Saville-Troike, 2006,p 86).

Instrumental motivation: A type of motivation connected to the desire to learn a subject

not only to increase occupational or business opportunities but also to get prestige or power (Saville-Troike, 2006,p 86).

1.8 Organization of the Study

The study is organized into 5 chapters. Chapter One comprised the background to the study, the problem statement, and research questions. The research aim and objectives, the significance of the study and operationalization of key terms are also presented in this chapter. Chapter Two focuses on reviewing some prior studies related to this current study. The review is done under two sub headings: theoretical and Empirical review. The research design and procedures employed in obtaining data for the study are presented in Chapter Three. Also in this chapter is the description of population and sample; and research instruments. Chapter Four examines the findings/results. It opens discussion on the main findings and observations, and gives a summary of the explanation of the results.

Chapter five: This is the last chapter and it is made up of the summary of the study, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature review is expected to explore theories, principles and facts related to the topic. This chapter is divided into sections that show the interrelationships with the chosen topic and organised under the following major headings;

- The theoretical framework of the study
- The importance of Agricultural Science as a field of study
- The attitude of students towards the study of Agricultural Science
- The factors influencing students attitude towards Agricultural Science
- Methods used to motivate students to develop positive attitudes towards Agricultural Science.

2.1 Theoretical Framework and Literature Review

The theoretical basis for this study has its foundation in the works of Fishbein and Azen (1975). As adapted to this research work, their theory suggest that students and parents personal experiences, observations, knowledge and values about Agriculture, affect their attitudes about agriculture which in turn affect their beliefs, intentions and decisions to participate. Also, relevant to this study is the concept of self-efficacy.

According to Bandura (1994), in his Self-Efficacy Theory (SET), expectations such as motivation, performance and feelings of frustration associated with repeated failures determine effect and behavioural reactions. People's behaviour is strongly influenced by their confidence in their ability to perform that behaviour. This implies that, students may choose Agricultural Science if they are convinced and confident in learning and passing the subject very well. Bandura added that, the Self Efficacy

theory plays an essential part of self system. A person's attitude, abilities and cognitive skills comprise the Self System and this system, plays a major role in how we perceive situations and how we behave in response to different situations. If students believe that it is easy for them to perform, then they are likely to learn the subject but if they perceive the subject to be difficult, they will not be motivated to choose the subject as an elective subject. The implication of this theory is that students' perceptions about their own abilities influence their attitude towards the subject.

2.2 Importance of Agricultural Science

Agriculture has proven to be highly effective in reducing poverty in low-income countries Globally (Christiaensen, Demery & Kuhl, 2010). It plays a central role in promoting growth and poverty reduction in the Ghanaian economy and Ghana needs an agricultural revolution based on productivity growth to raise almost a million more Ghanaians out of poverty, improve rural livelihoods significantly, and make a dent in the poverty of the rural savannah, especially in the North (Christiaensen, Demery & Kuhl, 2010). About 80% of the poor and almost all those who suffer hard-core poverty live in rural areas. It is expected that increased farm yield and improved access to marketing facilities will result in increased farm incomes, which will not only contribute substantially to poverty reduction, but will also greatly help to remove the poor image of agriculture as a viable economic activity option for the more educated youth in Ghana (Beyuo & Bagson, 2013). According to the Ministry of Youth and Sports (as cited in Beyuo & Bagson, 2013), agriculture contributes to Ghana's Gross Domestic Product (GDP) and providing employment for about (80%)

of Ghana's population. In this regard, paying much attention to agriculture is vital especially in a developing country like Ghana.

Agriculture in the past years was the best course of study in Ghana's educational institutions. It was given the needed attention in the educational sector and was studied right from lower primary to junior High school (www.modernghana.com). But what do we see today? The educational system in Ghana offers General Agricultural Education to primary school pupils. It is usually aimed at developing attitudes, abilities and behaviour which are considered desirable by society in the development of the individual. The primary aim of general education at the basic level is to prepare the pupils for further studies in the JHS and to develop good attitudes particularly in Agriculture (Baffour-Awuah, 1996). Vocational Agricultural Education is offered to students in the Senior High Schools, Colleges of Education and the Universities. It is intended to prepare learners to become good workers on farm jobs and non-farm jobs and also for further studies in agriculture (Baffour-Awuah, 1996).

Agricultural Science has been integrated with Social Studies, Life Skills and Basic Science to become a new subject called Natural Science from Primary 1-3 and called Integrated Science from primary 4-6. Selected topics in Agricultural Science and Basic Science have been put together to become a new subject called Integrated Science in the Junior High Schools, Senior High Schools and Colleges of Education. This has caused a loss of interest in Agricultural Science as a course of study in senior high schools (www.modernghana.com). Due to this, most of the senior high schools which were offering Agricultural Science as a course of study have dropped the course. Schools which are not offering the course are not also making effort to implement the course. There are a number of private senior high schools in Ghana but

none of them is offering Agricultural Science as a course of study (www.modernghana.com). Parents do not want their wards to offer Agricultural Science as a course in senior high school and higher institutions. The question therefore is that, which people should attend the various Agricultural colleges in Ghana? Who will take care of the Ghana Cocoa Board (COCOBOD), Cocoa Research Institute of Ghana (CRIG) and other Agricultural sectors in Ghana and occupy big positions in agriculture at the international level? What will be the consequences of our indigenous farmer in the rural areas who produce our daily bread? (www.modernghana.com).

The National Research Council (1996) as cited in Wildman and Torres (2001: 46) stated that "modern food and agriculture system is large, complex, diverse and dynamic and Colleges of Agriculture should reflect these contemporary changes." Moreover, Goecker, Whatley and Gilmore (1999) as cited in Wildman and Torres (2001: 46) stated that "Colleges and Universities must continue to strengthen educational programmes to produce graduates who can address the problems to be solved in the 21st century." Goecker, Whatley and Gilmore (1999: 18) added that "much greater efforts will be required to attract sufficient numbers of outstanding students to prepare for very challenging careers in the worlds food, agricultural and natural resources system."

Poor performance in Agricultural activities over the past years has been blamed on tough environmental conditions, poor soil quality, frequent droughts and limited infrastructure for transporting goods to the market (Hanson, 2008). But in the mist of these challenges in Africa and for that matter Ghana, Ghanaians can improve upon their agricultural productivity by learning from countries that has been successful in agriculture education (Hanson, 2008). For instance, Asian governments

have enormous credibility in terms of using Agricultural education to increase productivity (Hanson, 2008). Ghana, still have the potential of increasing productivity and exporting agricultural produce if government support the sector rather than importing and relying on foreign aid (UNDP, 2013). Some experts suggest that African governments have resisted funding agriculture programs because they have become too dependent on international food aid. Mafa Chipeta, a Malawian, who heads the Food and Agriculture Organization's sub-regional office in Ethiopia, says "Africa needs to be offended at the idea of a grown-up continent being fed by others that have no obligation to do so" (Hanson, 2008. 2).

Cotlear (1990) claims that when new technologies are introduced, formal education may be an important element for successful implementation, as education decreases the costs of obtaining new information and learning to apply new techniques. ''Schooling is not only useful after new technologies have been adopted but may also help to determine whether a farmer decides to be an early adopter of innovations and the extent to which the new innovation will be used'' (Weir, 1999. 8). ''Also people with education tend to be more affluent and are in less danger of starvation if a prospective innovation is unsuccessful; secondly, educated farmers may be more likely to be contacted by agricultural extension workers looking for model farmers to test innovations; and thirdly, literate farmers are better able to acquire information about potential innovations and to make rational evaluations of the risks involved in trying new inputs, crops or methods'' (Weir, 1999.8).

Education also increases farm output by helping students acquire general skills in school, reduce technical inefficiencies in production and developing attitudes to encourage the acceptance of new technologies (Hussain and Byerlee 1995).''Increasing literacy and numeracy may help farmers to acquire and understand

information and to calculate appropriate input quantities in a modernizing or rapidly changing environment. Improved attitudes, beliefs and habits may lead to greater willingness to accept risk, adopt innovations, save for investment and generally to embrace productive practices'' (Appleton and Balihuta 1996; Cotlear 1990) as cited in (Weir, 1999.4)

Ghana's Vision 2020 ultimately aims at transforming Ghana into a middle-income country by the year 2020 and thus increasing employment and average incomes leading to a significant reduction in poverty levels and inequalities. This vision can only be achieved if the youth are attracted to enroll in the agricultural sector. Frick and Spotanski (1990: 6) confirms that "Agriculture literacy is important to the future of our nation and the discipline of Agriculture."

2.3 Attitude of Students towards Agricultural Science

Attitudes are seen as cognitive and affective orientations or dispositions towards an object, idea, person and situation, among others (Fiske & Taylor, 2008). Attitudes can also be defined as "a disposition to respond favourable or unfavourable to an object, person, institution or event" (Ajzen, 2005: 3). Myers (1996: 124) defines attitude as "beliefs and feelings related to a person or event and their resulting behaviour." Zimbardo (1999) also defines attitude as positive or negative evaluation of people, objects, events, activities, ideas or just about anything in our environment. Attitudes start developing from childhood and are influenced by many factors including; parents, peers, and interactions with people who have religious, social, political and cultural differences (Brown, 2000). Therefore, "attitudes forms a part of one's perception of self, of others, and of the culture in which one is living" (Brown, 2000: 180).

Attitudes towards leaning are believed to influence behaviours and if students have positive attitude towards any subject, they can achieve many things in that specific area (Gajalakshmi, 2013). Attitudes can be useful prediction tools and instructors can predict the behaviour of their students by knowing whether students have positive or negative attitudes towards the subject in question(Shenaifi, 2013). According to Ajzen (2005) students attitudes towards a subject are the most important determinants of their professional behaviour. This implies that if students have a negative attitude towards Agricultural Science, then they are most likely not to engage in careers related to Agriculture. Some studies have shown no relationship between attitude and behaviour. Anecdotal evidence by Weir (2000) suggest that traditionally Ethiopians have highly valued formal education yet few children are enrolled in school and fewer still can be expected to complete primary education. Attitudes are not necessarily related to behaviour. Expressed behaviours may be influenced by many factors including the psychological needs of the person (Weir , 2000). Ajzen and Fishbein (1977) added that other conditions improve the predictive accuracy of attitudes. That is when the measured attitude is general and the behaviour is very specific, we should not expect a close correspondence between words and actions. In 26 out of 27 of such research studies, attitude did not predict behaviour. But attitude did predict behaviour in all 26 studies where they found that the measured attitude was directly pertinent to the situation.

According to Myers (1996: 126) "attitudes determines virtually nothing. What people say often differs from what they do." However, there are conditions under which attitude will predict behaviour and these include: when we minimise other influences upon our attitude statements and our behaviours, when attitude is specifically relevant to the observed behaviour and when it is potent (Myers, 1996).

Greenwald (1989) also reported that individuals with positive attitudes toward a subject or situation tend to evaluate it positively. Forming positive attitudes towards Agricultural Science increases the desire of the student in learning the subject and improves their ability to apply what they learn. Student's attitude shows their ability and willingness to learn (Workman, 2014). Morrison (1989) and Kim and Hunter (1993) in further studies confirmed that specific relevant attitudes do predict behaviour. Sandoval and Harven (2011) confirms that student's motivation to learn science is directly related to their attitude towards science.

Studies show that many people do not hold positive attitudes toward Agricultural (Kwakye, 2016; Baffour-Awuah, 1996; Pinda, 2010; MOFA, 2011; Rogers & Ford, 1997; George, 2000; Baliyan & Nenty, 2015). Some students have negative attitude towards Agricultural Science and scientists because they see science as a subject for mad people. Others describe scientists as "hard," "old," "frightening," and "colorless" (Rogers & Ford 1997). However, some researchers have also observed some positive attitudes among students towards agriculture. Examples include the works of Darko et. al. (2016); Thoron and Burleson (2014); Onuekwusi and Okorie (2008) and Joshua, Pur and Gwary (2008) showed that students had positive attitudes towards Agricultural Science. Shenaifi (2013) also noted that students who were studying agriculture programs possessed attitudes, which were supportive of agriculture as a career field. He observed that the students of non-agriculture program agreed with the statements that agricultural program courses were better suited for male students, and those students pursuing careers in agriculture should enrol in agriculture, more than did students of agriculture programmes. Due to the great influence of attitude on learning, it is important to identify the determinants of attitude towards the study of Agricultural Science (Oluwatelure & Oloruntegbe, 2010).

2.4 Factors Influencing Students Attitude towards Agricultural Science

Several factors have been suggested for influencing students attitudes towards the study of science and these include: students' undesirable experiences in previous science courses and with instructors, lack of needed skills to learn and apply scientific concepts, lack of motivation to work hard in science classes, home backgrounds, school and classroom environments, biases of peer groups, the media's portrayal of scientists, and students' perceptions of rewards associated with learning (Rogers and Ford 1997). Science anxiety, the fear of science learning, and apprehension toward scientists and science-related activities are also results of these factors (Rogers and Ford 1997).

Mohamed and Waheed (2011) also identified three group of factors that play a key role influencing student attitudes; factors associated with the students themselves (i.e., anxiety, Agricultural Science achievement, self-efficacy and self concept, motivation and experiences at school); factors associated with the school, teacher and teaching(i.e., teaching learning resources, classroom management, teacher knowledge, attitude towards Agricultural Science, guidance, beliefs); thirdly, factors from the home environment and society (i.e., educational background, parental expectations). Parents want their children to succeed in school and take up jobs that will give them a bright future. This sometimes push some parents to transfer their fears, likes and dislikes to their children (Oluwatelure & Oloruntegbe, 2010) Myers (1996) confirms that social factors can be enormous enough to induce people to violate their deepest convictions.

Also, as adapted by Dyer and Osborne (2000) from the work of Fishbein and Ajzen (1975), students' and parents' personal experiences, observations, knowledge, and values about agriculture affect their attitudes about agriculture, which in turn,

affect their beliefs, intentions, and decisions to participate. The attitude of the individual is based on knowledge, skill and motivation. Therefore access to information and the type of information received are key contributors to attitude formation. Students are sometimes persuaded by their peers, parents, teachers, mentors or counsellors to either enrol or not to enrol in agriculture. What they hear influence their beliefs/attitudes and in effect, change their behaviour. Olson and Zanna (1981) and Ajzen and Timko (1986) confirm that when people's attitudes towards a specific practice is altered, it influences behaviour.

Wildman and Torres (2001) also noted that the sources of influence in selecting Agricultural Science as a major included the sources of influence related to exposure to Agriculture. Prior experiences, relatives in agricultural work, radio broadcast, TV programmes and Literature influenced students attitude towards agriculture (Schuster & Costantino,1986). Donnermeyer and Kreps (1994) also found that students already exposed to agriculture tended to enrol in agriculture more often than students without exposure. Families of students have been considered an influential factor in choosing Agricultural Science as major. Parents with an Agricultural background more often than not, have significant impact on a student's choice in attending an agriculture College (Donnermeyer & Kreps, 1994).

Also, student's ability to learn Agriculture can be influenced by their attitudes towards the subject, their culture, the social value of learning Agricultural Science, and also the students' attitudes towards themselves as members of their own culture (Ellis, 1994). Culturally, a number of strongly held traditions and customs hinder women farmers from having secure land title, access to agricultural extension and support services, and mobility. Farming activities are perceived as the domain of males (men) and they are more likely to succeed in agricultural related vocation than

their female counterparts (Adisa & Adekunle, 2007). Also, quite a number of studies have shown that there are differences in the beliefs held by females and males towards agriculture. Females show a lower science self-concept than males (Eshun, 2004; Ma and Kishor, 1997). Therefore males show more positive attitudes towards agricultural science than females.

According to Akinwunmi (1997) and Williams (1997), youths' interest in farming activities is diminishing. Reasons for this could be attributed to the fact that rural farmers are perceived to be very poor and farm work is considered laborious. Also, Al-shenaifi (1993) reported that one of the negative attitudes of the youth in Saudi Arabia towards manual work is that they despise working in agriculture. It is originally due to the Bedouin lifestyle. The Bedouin criticised working in occupations such as agriculture, forging and carpentry. Bedouin still prefer certain jobs such as driving a car or military services. The implication is that, the culture and social value of the students could influence their attitude towards agriculture negatively. Students who despise manual work will certainly not be interested in agriculture (Al-shenaifi, 1993).

Another reason why students would not enrol in Agriculture is that students take the impression that Agricultural Education is for weak students (Al-shenaifi, 1993). Students are taught to despise agricultural education because students, whose grade point averages are low, are recruited to enrol in Agricultural Colleges. The reason listed for not enrolling in agricultural courses is the poor reputation of the subject among students (Al-shenaifi, 1993).

Pinda (2010) also noted that many youths are shunning agriculture due to difficulties they encounter in the sector. Farming by using a hoe is almost a torment to the youth. That is why they run away from farming activities, creating irrational fear

for agriculture in the minds of the youth. This fear is also transmitted to the study of Agricultural Science by these youths during their secondary school career and perhaps their tertiary education (Pinda, 2010).

It has been assumed that human beings are basically rational information processors; hence, their beliefs, attitudes and behaviour can be influenced by the information available to them (Ajzen & Fishbein, 1975). This happens when the information is formally presented to them with clear evidence which counters their beliefs (Travers, 1973). Accordingly, students will see the need for an attitude change and consequently learn the new attitude if presented and confronted with evidence (Hovland, Janis, & Kelley, 1953). The information available to students especially by their predecessors is an important factor that can influence students to develop negative attitudes towards Agricultural Science (Myer, 1996). As students enter the College, they begin to acquire a history of learning and to form opinions and beliefs in their contacts with Agricultural Science and other subjects. Some of these beliefs predispose them favourably or unfavourably towards the subjects. As this tendency is left unchecked, students are seen to herd away from some subjects to other subjects for their own reasons (Ndem & Akubue, 2016).

Lone (2007) noted that students do not want to enrol for agriculture and will rather prefer to enrol for other optional subjects such as computer studies, business studies, arts and design for what they stand to benefit. The implication of this is that, students will be motivated to learn or choose Agricultural Science if they benefit directly from it. Shinn, Briers, Christiansen, Edwards, Harlin, Lawver, Linder, Murphy and Parr (2003) agree that, students will best learn if they realise how the concepts are directly applied to their future lives.

Nicolaidou and Philippou (2003) also indicated that negative attitudes are a result of repeated failures or problems when dealing with agricultural tasks and these negative attitudes may become relatively permanent. They add that there are a number of factors that explain why attitudes towards Agricultural Science become more negative with school grade and these included; pressure to perform well, over demanding tasks, uninteresting lessons and less than positive attitudes on the part of the instructor

Hsin and Clyde (1998) and Lin and Warden (1998) also report that students can have fear or unpleasant feelings about their past Agricultural Science learning experiences and that students of different majors had different perspectives about Agricultural Science.

A research carried out by Ayaaba (2013) indicated that lack of meaning of concepts could influence the attitude of students towards the subject. If concepts are not well taught, students will develop negative attitude towards the subject. Agricultural Science instructors who are not well trained with requisite knowledge and skills end up teaching students to learn by rote and not to understand the concepts and apply (Agyemang, 1993). According to a study by Cherif and Wideen (1992), the way Agricultural Science is taught, both at the high school and college level, also plays a major role in shaping students' attitudes toward science. Students enjoy learning more and learn better when what they are studying is of personal interest and relates to their lives (Akey, 2006). Akey (2006) again observed that the class environment where teachers are supportive, students feelings of control and confidence in their ability to succeed is enhanced.

Aggarwal (2001) clearly indicated that well trained teachers are needed to teach the various subjects. And a teacher who does not have both academic and

professional teacher qualification would undoubtedly have a negative influence on the teaching and learning of his/her subject. A tutor who is not fruitful will undeniably influence the performance and the attitude of students towards the subject in question (Agyemang, 1993). Layfield, Minor and Waldvogel (2001) identified a lack of equipment, in-service/teacher training as significant barriers to effective teaching. Some other barriers identified included lack of funding, resource sharing and time (Wilson & Curry, 2011). Awuku, Baiden, Brese and Ofosu (1991) also found that the best way to teach agriculture is by 'doing' and that the lack of text books and poor funding are some of the many factors that affect teaching and learning processes and in effect the attitude of students.

Obi (2005) also noted that, there is the inability of curriculum planners to state the general aim of vocational education. Curran's and Rosen's (2006) research revealed that factors related to physical environment in which the course is conducted, the course topics and course execution, in addition to the instructor's personality are significant influence on student's attitude towards their courses. Students are most likely to develop negative attitude towards agriculture if the physical environment of the school does not reflect what is being taught in class. Also, the tutor's personality greatly influences the attitude of the students in that, the way students perceive their teachers affect their attitude towards agriculture. If Agricultural Science tutors are always seen wearing wellington boots, looking dirty all the time , poor and above all having no command over his/ her subject area, students will not be motivated to study Agricultural Science. Thus, Agricultural Science tutors who are poor role models and are not worthy of emulation by students in the community, will result in students and parents regarding agriculture as a subject for lazy people (Baffour-Awuah, 1996).

Most students have poor attitude towards Agricultural Science and this may be due to students seeing no real difference in the skills and agricultural practices at home and what is taught in school. Also, students tend to dislike Agricultural Science if school farms and gardens are used to punished deviant and indiscipline students (Baffour-Awuah, 1996). The youth regard farming as an odd job that is meant for the illiterate and rural people (Orji, 2013). Ghana Statistical Service (2013) a national data compilation body reported that 31.5 per cent of the agricultural household members had no formal education, 60.3 per cent had up to middle school level education and 8.2 per cent had secondary school education or high. These statistics are worrying for a country that is predominantly farmers (GSS, 2013). The high proportion of low level of education among agricultural population has implications for the sector as the adoption of modern farming technologies requires relatively higher levels of education and literacy, particularly in English language (www.modernghana.com).

Ming (2010) as cited in the work of Odia (2014), found that students are often attracted to post-secondary education because of the career opportunities it may provide. Students tend to take into cognizance the cost of education before enrolling on a particular programme of study (Odia, 2014). Ming (2010) added that, students often make choices based on the job market for college graduates.They are influenced by what graduates are doing, what graduate schools they attend and contributions that they are making to society (Odia, 2014). Lifestyle may be an important factor in career decision making because students preferred greater financial rewards and higher social status upon graduation. Kochung and Migunade (2011) confirmed that there are often certain benefits that people expect to come with the chosen career as they make career choices. Discrimination in certain profession also prevents students from choosing certain careers (Kochung & Migunade, 2001).

2.5 How to Motivate Students to Develop Positive Attitudes towards Agriculture

Motivation is regarded "as a key component of a model of language learning" (Spolsky, 2000, p. 158). Yashima (2002) reported that motivated students have greater self confidence in their second language, resulting in a greater willingness to communicate. Not only is motivation important in language learning but all subject areas including Agricultural science (Tatoo, 2007). He added that success in teaching and learning has been determined largely by the ability to motivate both students and teachers along productive lines.

Saville-Troike (2006) also noted that individual motivation is a factor that is used to explain why some learners are more successful than others. The amount of effort that students show during the learning process depends on how motivated they are to learn. The more motivated students are, the more and easier they will learn (Saville-Troike, 2006).

Saville-Troike (2006: 86) added that motivation is usually of two types. One of them is integrative motivation, which is based on learner interest, i.e. to what extent the learner is interested in the subject. The other motivation type is instrumental motivation, which is connected to the desire to learn the subject not only to increase occupational or business opportunities but also to get prestige or power. McClelland (1985) suggested two aspects of power; negative and positive. His power motive came from the theory that all human beings have a need for power, control and dominance. Individuals with higher power motive tended to relate more to successful interpersonal influence than others lower in power (McClelland, 1985). Students differ in their motivation towards learning and they show many different attitudes towards learning (Brown, 2000). Brown (2000) notes that students possess positive and negative attitudes in varying degrees and that negative attitudes could be changed by thoughtful

instructional methods such as using materials and activities. Students' attitudes can also be changed by using better teaching methods, more motivated teachers or better course books (Georgiou, Stavrinides & Kalavana, 2007). Osguthorpe and Graham (2003) suggest the use of blended instruction. According to them, blended instruction improves pedagogy, increases access to knowledge, increase the duration of teacher presence during lessons, and enhance ease of revision.

Attitudes are said to be developed from experience. Rani (2000) therefore suggests that student attitudes might be developed through suggesting projects which give students experience in problems that require the collection of evidence for forming conclusions. Projects can be suggested by the tutor or the student for the development of skills and attitudes rather than acquisition of knowledge. The organisation of project work helps to stimulate the initiative of students, arouse their interest, make them creative and help them express themselves. Projects also link Agriculture practiced at home and what is taught in school. For example, project work farms could serve as model farms for farmers in the community. Students can also produce farm products for sale in order to get income for future farming projects, pay their fees or meet other needs.

Student's attitudes can be formed from the attitude and experiences of others. Negative attitudes and experiences can be transferred from one student to the other. Therefore the situation of low student enrolment in science subjects may be reversed by changing the negative attitude of students towards science through persuasive messages (Piburn & Baker, 1993). This finding supports Crawley and Koballa (1994) who exposed grade 10 students to persuasive messages regarding enrolment in chemistry in Grade II. They also found that those exposed to the message enrolled more in the chemistry class than their counterparts in the control group. This finding

provides support for using belief- based messages to promote enrolment in science. The Theory of persuasion and communication by Hovland, Janis and Kelley (1953), as applied to science education by Shrigley (1978) in the Persuasive Communication Model (PCM) has shown that attitudes are changed when people are presented with related persuasive communication messages.

Strong, Silver and Perini (2001) recommends rigorous learning, where the curriculum is developed through complexity, provocativeness, and emotional involvement, rather than simplifying or "dumbing down" curriculum standards. Teachers are therefore encouraged to challenge students by using more student centred methods. Recent research indicates that students respond to the challenge of a rigorous curriculum, especially when it contains effective teaching techniques and a supportive classroom environment. Agricultural education can therefore be improved by revising the curriculum to include the application of concepts from physical and biological science (National Research Council, 1988)

Making the teaching and learning of agric topics more relevant to student's lives helps them see the value of the subject and in turn motivate them to develop a better attitude towards Agricultural Science (Leonard, 2010)

According to the theories of the constructivism, learning is an active and constructive process. Learners not only construct knowledge but the knowledge they already posses affect their ability to gain new knowledge. Thus the knowledge already acquired by the learner will affect how he/she interpret what a subsequent teacher is trying to teach (Etkina & Mestre, 2004). As indicated earlier, one of the reasons why students have negative attitude towards Agricultural Science is their previous experience. Therefore, teachers should probe the relevant previous knowledge that

students have in order to choose appropriate methods with respect to the content to be taught (Etkina & Mestre, 2004).

An equally important observation made by Seawell (1990) was that teaching and learning resources helped in effective teaching and learning and that without them, Agricultural Science lessons will become unexciting, unyielding, dull and impracticable. Nacino-Brown, Oke and Brown (1982) added that the mere use of TLMs does not guarantee effective teaching and communication. It is the careful selection and skilful handling by the teacher that renders them useful in facilitating the learning process. It is therefore necessary for teachers to have adequate knowledge to deliver their lessons well (Nacino-Brown, Oke & Brown, 1982).

2.6 Summary of Literature Review

The literature reviewed revealed that Agricultural plays a central role in promoting growth and poverty reduction in the Ghanaian economy (Christiaensen, Demery & Kuhl, 2010). Agriculture contributes to Ghana's Gross Domestic Product (GDP) and providing employment for about (80%) of Ghana's population. In this regard, paying much attention to agriculture is vital especially in a developing country like Ghana (Beyuo & Bagson, 2013). Attitudes was defined as ''a disposition to respond favourable or unfavourable to an object, person, institution or event'' (Ajzen, 2005, p.3).

The literature also indicated that Agriculture is often overlooked especially by students and their peers (Akintade, 2013). Some of the authors indicated that many people do not hold positive attitudes towards Agricultural Science (Kwakye, 2016; Akintade, 2012; Baffour-Awuah, 1996 ; Pinda, 2010; MOFA, 2011). The general

public does not have positive feelings towards science and scientists (Rogers and Ford, 1997; George, 2000). Some students have negative attitude towards agric science and scientists because they see science as a subject for mad people. Others describe scientists as "hard," "old," "frightening," and "colorless" (Rogers & Ford 1997). However, some authors observed positive attitudes among students towards agriculture. Example, works by Darko, et. al. (2016), Thoron and Burleson (2014), Onuekwusi and Okorie (2008) and Joshua, Pur and Gwary (2008) showed that students had positive attitudes towards Agricultural Science. Shenaifi (2012) also noted that students who were studying agriculture programs possessed attitudes, which were supportive of agriculture as a career field.

Several reasons have been suggested for student's negative attitude towards agriculture and these included; students taking the impression that Agricultural Education is for weak students (Al-shenaifi, 1993), students seeing no real difference in the skills and agricultural practices at home and what is taught in school (Baffour-Awuah, 1996). Layfield, Minor and Waldvogel (2001) identified a lack of equipment, in-service /teacher training as critical barriers to effective teaching and learning. Some other barriers identified included lack of funding, resource sharing and time (Wilson & Curry, 2011). Also, fear and repeated failure (Nicolaidou and Philippou, 2003), feeling of ability to perform (Bandura, 1994) and motivation were identified as some of causes of students poor attitude towards Agricultural Science. On the issue of correlation between attitude and enrolment, some authors found a relationship between the two variables (Fishbein & Ajzen, 1975; Dyer & Osborne, 2000; Ajzen, 2005; Workman, 2014; Sandoval and Harven, 2000). However, Weir (2000) reported that attitudes are not necessarily related to behaviour. Expressed behaviours may be influenced by many factors including the psychological needs of the person.

Furthermore, the literature reviewed revealed that using persuasive messages (Eriba, 2013; Koballa,1994; Shrigley, 1978) promoting rigorous learning (Strong, Silver & Perini, 2001), adequate use of teaching learning resources (Brown, 2000), making learning more relevant to the lives of students (Leonard, 2010) and, adequate motivation (Saville- Troike, 2006; Yashima, 2002 & Spolsky, 2000) could motivate students to study Agricultural Science. However, there was no consistency in the findings regarding the relationship between attitude and enrolment. Some authors believed there is a correlation between attitude and enrolment while others disagreed to the fact that there was a correlation between attitude and enrolment.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The methodology describes the research methods and the procedures employed in obtaining data and analysis of the data. It consists of the research design used, variables considered, location of the study, target population, sample size and technique, research instruments and their validity and reliability, data collection procedure, data analysis plan and ethical considerations of the research.

3.1 Research Design

The design employed is the descriptive cross-sectional survey. Descriptive surveys according Cohen, Manion and Morrison (2007) and Shuttleworth (2008) is concerned with conditions or relationships that exist; practices that prevail, beliefs, points of views or attitudes that are held, processes that are going on, effects that are being felt or trends that are developing. Such studies look at individuals, groups, institutions, methods and materials in order to describe, compare, contrast, classify, analyse and interpret the entities and the events that constitute their various fields of inquiry. Cross-sectional survey on the other hand is a type of descriptive survey. A cross-sectional survey can be used to collect data to make inferences about a population of interest (universe) at one point in time. Cross-sectional surveys have been described as snapshots of the populations about which they gather data (Lavrakas, 2008.p.1).

For every research design, there are strengths and weaknesses. Some of the strengths of cross-sectional design as described by Lavrakas (2008) included that: it is Comparatively quick to conduct, Comparatively cheap to administer, Limited control

effects as subjects only participate once, greater likelihood of participation as it is for a single time and that Large samples enable inferential statistics to be used, e.g. to compare subgroups within the sample. Also, the weaknesses of this design include: it does not permit analysis of causal relationships, can be time-consuming as background details of each sample have to be collected each time and sampling not entirely comparable at each round of data collection as different samples are used.

3.2 Variables Considered

The attitude of students towards the study of Agricultural Science was considered the dependent variable. Sex of students, parental occupation and programmes offered at the SHS are the independent variables. The intention was to know the attitude of students towards the study of Agricultural Science and whether their attitudes were dependent on the independent variables. Factors influencing student's attitude towards the study of Agricultural Science and how to motivate students to develop positive attitudes towards Agricultural Science were also considered.

3.3 Location of the Study

The research was carried out in St. John Bosco's College of Education and Gbewaa College of Education, both in the Upper East Region of Ghana. The researcher chose the two colleges because she is an Agricultural Science tutor stationed in St. John Bosco's College of education where student enrolment into the Agricultural Science class was declining yearly. Also Gbewaa College of education was chosen because it is closer to St. John Bosco's College of Education and offered me the opportunity to compare and analyse the responses of participants in both

Colleges. Finally, it is easier obtaining the data needed in a familiar environment and reducing cost of transportation.

3.4 The Target Population

Polit and Hungler (1997) define population as the entire aggregation of cases that meet a designated set of criteria. The target population included all level 100, 200 and 300 General Arts students who were studying in 2014/2015 academic year in St. John Bosco's College of Education and Gbewaa College of Education in the Upper East Region.

Table 3.1: General Enrolment of Students

Levels	Gbewaa College	St John Boscos College	Total
100	223	111	334
200	579	257	836
300	365	238	603
total	1167	606	1773

Source: Field Data, June 2015

3.5 Sampling Method

A sample refers to the elements selected with the intention of finding out something about the entire population from which it is taken (Polit & Hungler, 1997). However, Convenience sampling, as the name implies is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study. Convenience sampling is used

because of the availability and the quickness with which data can be gathered (Polit & Hungler, 1997). Convenience sampling technique was used to select a sample of 120 students (n=120); that is, sixty (60) students each from both Colleges of education for the study.

3.6 Research Instruments

Basically, questionnaire was chosen as data collection instrument. Questionnaires can be thought of as a kind of written interview. It is a printed self report form designed to elicit information through the written responses of the subjects (Burns & Grove, 1993). The questionnaire was chosen because: It is practical, large amounts of information can be collected from a large number of people in a short period of time and in a relatively cost effective way, can be carried out by the researcher or by any number of people with limited affect to its validity and reliability, the results of the questionnaires can usually be quickly and easily quantified by either a researcher or through the use of a software package, can be analysed more 'scientifically' and objectively than other forms of research, when data has been quantified, it can be used to compare and contrast other research and may be used to measure change. Positivists believe that quantitative data can be used to create new theories and / or test existing hypotheses (Burns & Grove, 1993). However, questionnaires have the following weaknesses: they are inadequate to understand some forms of information - i.e. changes of emotions, behaviour, feelings etc. Phenomenologist state that quantitative research is simply an artificial creation by the researcher, as it is asking only a limited amount of information without explanation. It very difficult to tell how truthful a respondent is being, the respondent may be forgetful or not thinking within the full context of the situation and people may read differently into each question and therefore reply based on their own interpretation of

the question - i.e. what is 'good' to someone may be 'poor' to someone else, therefore there is a level of subjectivity that is not acknowledged (Burns & Grove, 1993).

3.7 Validity of the Questionnaires used

Validity is the degree to which an instrument measures what it is intended to measure (Polit & Hungler, 1997). Vella (1994) cautions that there are potential problems with summing responses to individual attitude questions. Responses to a particular statement may have different meaning for different people. Also, summing scores artificially assigns equal weight to each statement. Thirdly, respondents may provide answers which do not accurately represent their attitude, perhaps owing to insufficient self awareness or perhaps because they strive to present what they feel as appropriate answers. Finally, attitudes conveyed may be biased because of respondents *ex post* rationalization of their behavioral choices.

Following Vella (1994) the attitude questionnaire was subjected to a series of test to ensure that the scores gotten is correlated with responses to the individual questions and that it is consistent. By this, the researcher gave the first questionnaire designed to senior tutors in the field of agriculture to peruse and give their comments on the suitability of the questionnaire in measuring the attitude of students, the clarity of the questions and the clarity of the instructions to follow in selecting the level of agreement. The tutors after going through suggested that the number of questions be reduced from 38 to 23 to motivate respondents to answer the questions with ease and less time. Also, they suggested that, the statement: "I will not destroy my future by choosing agriculture" be changed to "I will not have a bright future by choosing Agricultural Science." The questionnaire was modified according to the comments made and also considering the following points:

1-using clear unambiguous statements

2-using both positive and negative statements to avoid bias

3-using items that covered the research questions raised in chapter one

3.8 Reliability of the Questionnaires

Reliability is the degree to which a data collection instrument can be depended upon to yield consistent results if used repeatedly over time on the same person or if used by two different investigators (Polit & Hungler, 1997).

To establish the reliability of the scale, the questionnaire was administered to a sample of 20 students. Then the same scale was administered to the same group after a week under relatively the same conditions. The reliability coefficient was estimated using the Cronbachs Alpha formular. The estimated value was (0.89) which is considered reliable for this study.

3.9 Data Collection Procedure

Letters were written to both colleges seeking permission to collect data from the two institutions (i.e., Bosco's and Gbewaa colleges of education). After the permission was granted, the researcher collected both primary and secondary data from the two colleges. Primary data on students and tutors bio characteristics, student's attitudes towards Agricultural Science, causes of students poor attitude towards Agricultural Science and how to motivate students to develop positive attitudes towards Agricultural Science was collected. Also, secondary data on student's enrolment into the college from 2010 to date was also collected from both colleges of education for analysis.

The questionnaire for the students consisted of mostly closed ended questions with a few open ended questions which was intended to assess the attitudes of students towards agriculture. It addressed student's bio data, attitudes towards the study of Agricultural Science, factors influencing attitude towards Agricultural Science and ways of improving students interest in Agricultural Science. After designing the questionnaire, it was pre-tested to determine the validity and feasibility of using the questionnaire and also to identify weaknesses and time requirement. The population of the pilot study was 20. The respondents who took part in the pilot study were not used for the actual study and had similar characteristics to the sample used for the actual study. After pre-testing, some corrections were made to it and then the questionnaire was administered to students under the supervision of colleague tutors. The five- point Likert type questionnaire comprised of 23 items of which students were asked to select one level of agreement for each statement to indicate how they feel towards Agricultural Science. All items were scored on a 5-point scale ranging from 1(strongly disagree) to 5 (strongly agree). Also, two (2) open ended questions was provided for students to freely express how they feel about the subject and what can be done to motivate students develop positive attitudes towards Agricultural Science.

3.10 Data Analysis

Analysis of responses from the attitude questionnaire was analyzed. The closed ended questions were analyzed using a computer programme called Statistical Package for Social Sciences (SPSS) version 16. And the open- ended questions were analyzed by raising themes, quantifying emerging characteristics and analyzed qualitatively. Frequency tables were drawn from the data collected and presented in tables and graphs.

3.11 Ethical Considerations

Research ethics refers to the principles, guidelines and codes of conduct that are put in place to regulate the research process in order to carry out the research with the highest possible standards Bryman and Bell (2007). The researcher followed all the ethical procedures by first ensuring that the research did not cause direct or indirect physical and mental harm to the respondents. Secondly, the researcher provided enough information to respondents for them to make an informed decision as to whether to participate or not in the study. Thirdly, the respondent's rights to privacy were respected by the researcher. There was no invasion of respondents privacy and by this, the researcher ensured respondents anonymity and confidentiality. Lastly the researcher did not compromise the quality, validity, and reliability of the results by generating data through deception (Bryman and Bell, 2007).

CHAPTER FOUR

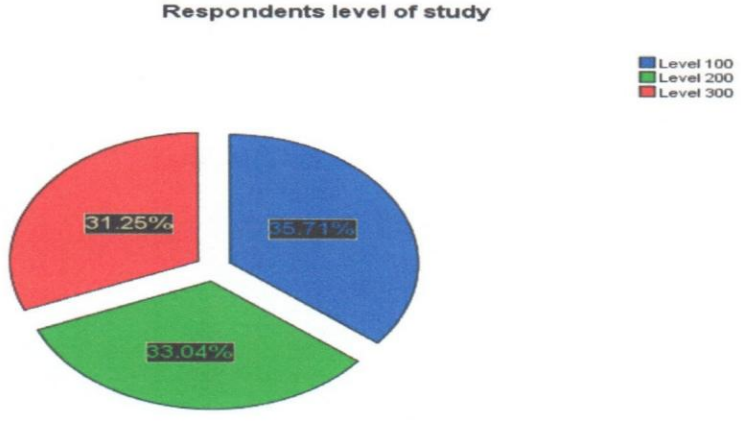
PRESENTATION AND DISCUSSION OF FINDINGS

4.0 Introduction

This section presents and discusses key findings from the empirical study on the attitude of students towards the study of Agricultural Science. The analysis is supported by secondary literature. The presentation and discussion centre on the personal characteristics of the respondents (i.e., age, sex, programmes studied at the SHS/SSS and their parents' occupations), attitudes towards Agricultural Science at the college level, the factors influencing student's attitude towards the study of agriculture and ways of improving student's interest in Agricultural Science. All the respondents were asked to respond to the items on the questionnaire. The close ended questions were rated on the five point likert scale and each responded was asked to choose one level of agreement for each statement. Also respondents were provided with open ended questions on the questionnaire to respond to and their responses were put under thematic headings and analyzed.

4.1 Background Information of Respondents

4.1.1 Level of Study

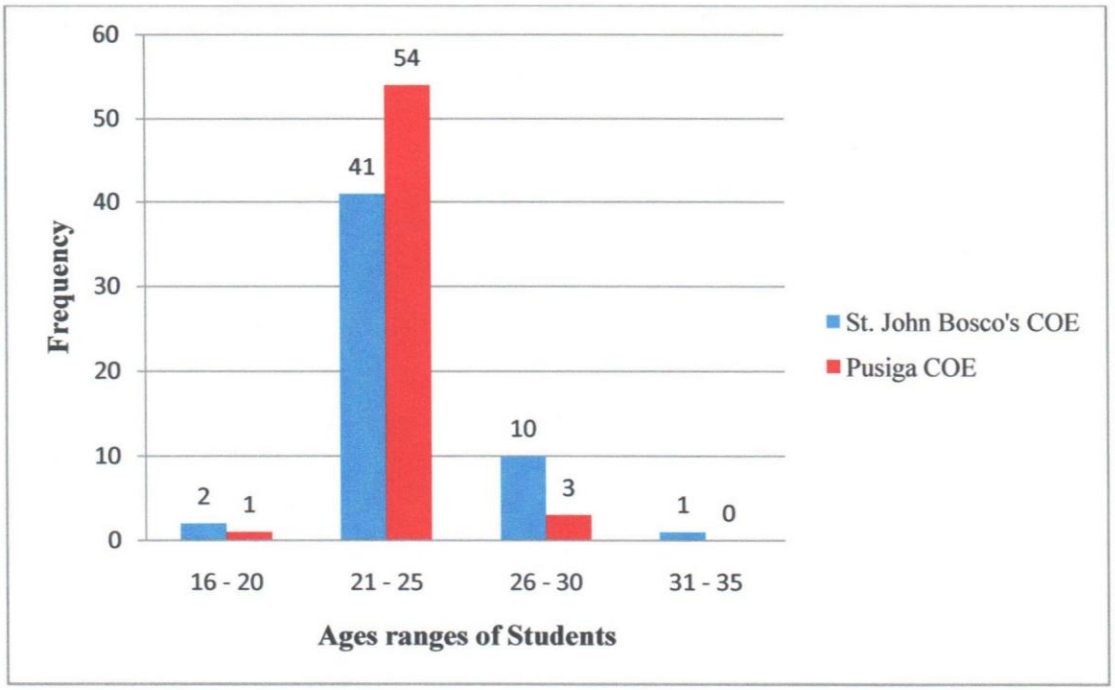


Source: Field Data, June 2015 **Fig 4.1 Respondents Level of study**

In all, 112 students were involved in the study from the two colleges though the initial target was one hundred and twenty (120) respondents. The researcher could not retrieve 8 questionnaires from respondents.

4.1.2 Age of Respondents

The age range of respondents was collected to know whether they fell within the category of the youth in the country.

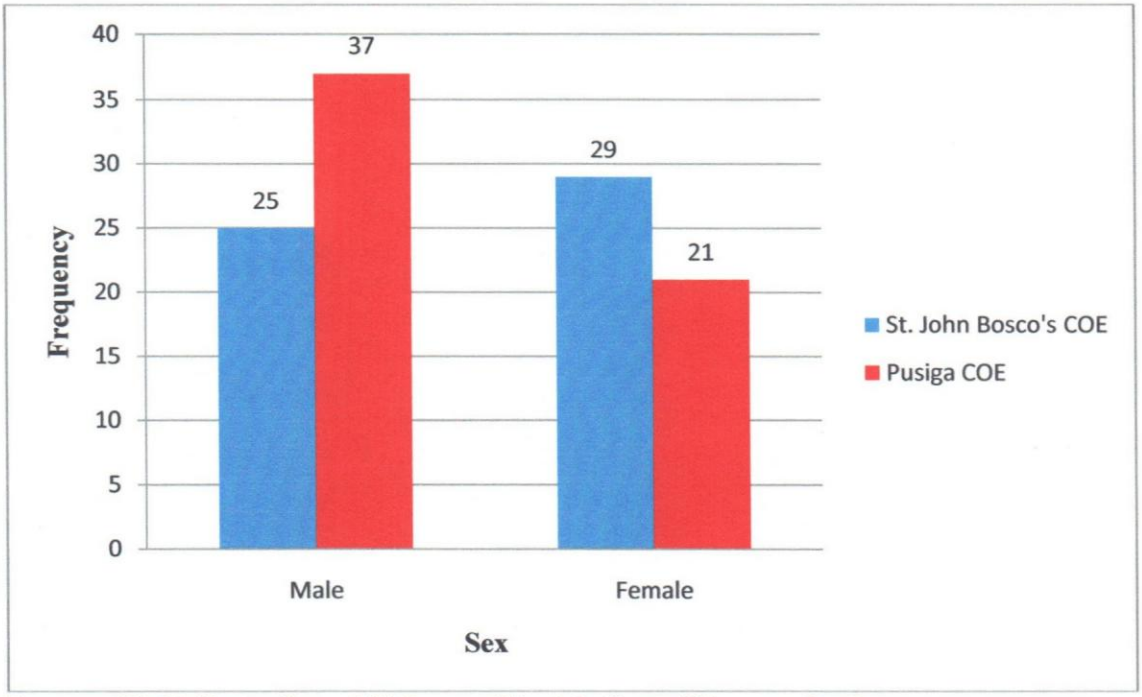


Source: Field Data, 2015 Fig 4.2 Age of Respondents

The researcher collected background information of respondents to help determine whether the background of students had any influence on their attitude towards Agricultural Science. As indicated by Pinda (2010), many youth are shunning agriculture and taking refuge in urban areas due to problems they encounter in the sector. From Fig 4. 2, all the students can be described as youth since they fell between the ages of 16-35.

4.1.3 Sex/ Gender of Respondents

Data on the sex of respondents was gathered by the researcher to find out if there was a significant difference in the attitude of both males and females towards the study of Agricultural Science.



Source: Field Data, June 2015 **Fig 4.3: Sex of Respondents**

In terms of sex, 62 males representing (55.4%) and 50 females (44.6%) were involved in the study. An independent samples t-test was conducted to compare the attitude of males and females towards the study of Agricultural Science. There was no significant difference in attitude for males (M = 1.79, SD = 1.28) and females (M =1.76, SD= 1.17); t (110) = 0.13, p =.69, two tailed). (See appendix D for detailed analysis).From the results one may conclude that there was no statistically significant difference in the attitude of males and females towards the study of Agricultural Science. In other words both categories of students shared similar attitude towards the study of Agricultural Science. Quite a number of studies have shown that there are differences in the beliefs held by females and males towards agriculture. Example, females show a lower science self-concept than males (Eshun, 2004; Skaalvik and

Skaalvik, 2004; Asante, 2012; Sanchez, Zimmerman and Ye, 2004; Ma and Kishor, 1997). But contrary to the above authors, this study revealed that both sexes had a positive perception about Agricultural Science.

4.1.4 Parental Occupation of Respondents

The purpose of this research question was to know whether parental occupation had any influence on students' attitude towards Agricultural Science.

Table 4.1: Parental Occupation of Respondents

Occupation of parents	Frequency	Percent
Farmer	62	55.4
Civil Servant	6	5.4
Public Servant	1	.9
Trader	17	15.2
Auto Mechanic	3	2.7
Teacher	13	11.6
Head dresser	2	1.8
Farmer and Trader	7	6.2
Teacher and Caterer	1	.9
Total	112	100.0

Source: Field Data, June 2015

Table 4.1 shows the parental occupation of respondents. But for the purposes of analysis, these were grouped into two categories (farm and non-farm background). An independent samples t-test was conducted to compare parental occupation and attitude of students towards the study of Agricultural Science. There was no significant difference in attitude of students with farm background (M = 1.74, SD = 1.24) and those without a farm background (M =1.82, SD= 1.22); $t(110) = 0.33$,p =.74,

Programme at SHS/SSS	Frequency	Percent
General Arts	66	58.9
Business Studies	24	21.4
Science	2	1.8
Home science	11	9.8
Visual Arts	5	4.5
Agricultural Science	3	2.7

two tailed) towards the study of Agricultural Science . (see appendix E for detailed results). From the results one may conclude that there was no statistically significant difference in the attitude of students with farm background and students without farm background towards the study of Agricultural Science. In other words both categories of students shared similar attitude towards the study of Agricultural Science. This finding is not consistent with (Donnermeyer & Kreps, 1994; Schuster & Costantino, 1986) who reported that, relatives in Agriculture influenced student's attitudes towards Agricultural Science.

Table 4.2: Programmes Offered by Respondents at the Senior High School

Programme at SHS/SSS	Frequency	Percent
General Arts	66	58.9
Business Studies	24	21.4
Science	2	1.8
Home science	11	9.8
Visual Arts	5	4.5
Agricultural Science	3	2.7
Islamic Studies	1	.9
Total	112	100.0

Source: Field Data, 2015

Table 4.2 displays the programmes offered by the respondents in their various Senior High Schools. It was observed that 66 (58.9%) of the students offered General Arts, followed by Business Studies 24 (21.4%), Home Science11 (9.8%), Visual art 5(4.5%) and the rest. Only three students representing (2.7%) offered Agricultural Science. But for the purposes of analysis, these were categorised into two (i.e., those who majored in Agricultural Science and those who did not). An independent samples

t-test was conducted to compare the attitude towards the study of Agricultural Science for students who studied Agricultural Science and those who did not. There was no significant difference in attitude for those who studied Agricultural Science (M = 1.00, SD = .00) and those who did not study Agricultural Science (M =1.80, SD= 1.24); $t(110) = 1.11, p = .06$, two tailed). See appendix F for detailed results. From the results one may conclude that the difference in attitude of students who pursued Agricultural Science and those who did not was not statistically significant. In other words both categories of students shared similar attitude towards the study of Agricultural Science.

The findings is consistent with Lone (2007) who noted that students do not want to enrol for Agricultural Science and will rather prefer to enrol for other optional subjects such as arts and Design, Computer Science and business studies for what they stand to benefit.

4.2 Attitude of Students towards the Study of Agricultural Science

Identifying and developing student's attitudes towards Agricultural Science are key in increasing enrolment and participation in the subject. According to Myers (1996: 130), "an attitude is our association between an object and our evaluation of it." Hence the research question sought to find out the views of students towards the study of Agricultural Science.

Table 4.3: Attitudes of Students towards the study of Agricultural Science

Statements	College	SD		D		U		A		SA		TOTAL	
		F	%	F	%	F	%	F	%	F	%	F	%
1.I hate Agricultural Science	B	33	61	10	18	3	6	2	4	6	11	54	100
	G	34	59	14	24	2	4	2	4	6	10	58	100
2. I feel at ease during Agricultural Science lessons	B	4	7	8	15	3	6	26	48	13	24	54	100
	G	3	5	9	16	8	14	25	43	13	22	58	100
3. I like to spend my spare time doing manual work	B	8	15	15	28	5	9	18	33	8	15	54	100
	G	2	4	8	14	11	19	31	53	6	10	58	100
4. I like studying Agricultural because it is easier as compared to other subjects	B	8	15	15	28	1	2	17	31	13	24	54	100
	G	10	17	21	36	4	7	15	26	8	14	58	100
5. Agricultural Education provides me with useful knowledge and skills	B	1	2	0	0	1	2	33	61	19	35	54	100
	G	1	2	0	0	3	5	29	50	25	43	58	100
6. I will not have a bright future by choosing Agricultural Science as an elective subject.	B	26	48	16	30	0	0	7	13	5	9	54	100
	G	38	65	12	21	0	0	5	9	3	5	58	100

Source: Field Data, June 2015

Legend: B =St. John Bosco's College of Education G =Gbewaa College of Education

SD= Strongly Disagree D= Disagree U= Undecided A= Agree SA= Strongly Disagree

From Table 4.3, 43(79%) of the respondents from St. John Boscos College of Education disagreed with the statement that, they hate Agricultural Science while 48(83%) from Gbewaa College of Education disagreed with the statement. Also, 8 (15%) and 8(14%) of the respondents from St. John Boscos and Gbewaa College of Education also agreed with the statement respectively. This result contradicts (Baffour-Awuah, 1996) who reported that most students have poor attitude towards Agricultural Science.

Some researchers say students show dislike for a subject if they do not feel at ease with the subject lessons. From this study, 39(72%) and 38(65%) of respondents from St. John Boscos and Gbewaa College respectively responded favourably to the statement that I feel at ease with Agricultural Science lessons. While 12 (22%) from St. John Boscos and 12(19%) from Gbewaa disagreed with the statement. This is an indication that majority of respondents enjoy Agricultural Science lessons. The result is consistent with Akey's (2006) finding that in class environments where teachers are supportive, students' feelings of control and confidence in their ability to succeed is enhanced.

Again, from St. John Boscos College of Education, 23(43%) disagreed and 26(48%) respondents agreed with the statement that l like to spend my spare time doing manual work. Also, 37(63%) agreed and only 10 (18%) respondents from Gbewaa College of Education disagreed with the statement. This is an indication that majority of respondents from Gbewaa College of Education enjoy spending their spare time doing manual than can be seen in St. John Boscos College of Education. But in both colleges, it can be concluded that majority of the respondents like manual work. This could be due to the fact that majority of the respondents come from a farm background and therefore by helping their families in the farm work develop interest

in manual work. The results is contrary to Al- Shenaifi(1993) that the youth despise manual work. It is also contrary to what was observed by Pinda (2010) that many youths in Tanzania are shunning agriculture due to the fact that farming by using a hoe is almost a torment to the youth and that is why they are not attracted to farming activities.

From Table 4.2, 23 out of 54(43%) respondents from St. John Boscos College of Education disagreed with the statement that Agricultural Science is easier as compared to other subjects. Also 31 out 58(53%) of the respondents from Gbewaa College of Education disagreed with the statement as against 23(40%) respondents who agreed with the statement. This indicates that, majority of respondents from Gbewaa College of Education perceive Agricultural Science to be difficult. This is consistent with Bandura (1994) who noted that if students believe that it is easy for them to perform, then they are more likely to learn the subject but if they perceive the subject to be difficult, they will not be motivated to choose the subject. The implication of this view is that student's perception about their own abilities influences their attitude towards the subject.

It was also observed in Table 4.2 that 52(96%) out of 54 and 54(93%) out of 58 respondents from St. John Boscos and Gbewaa College of Education respectively, agreed with the statement that agricultural education provided them with useful knowledge and skills. This could have been attributed to the fact that students get the right information from the school to solve their farm problems at home as supported by Olaitan (1988) that students with farm background come to school with farming problems like the type of fertilizer to apply, how to control weeds etc. and such problems are sometimes solved through the teaching of practical agriculture in schools. Also the result is consistent with Dyer and Osborne (2000) that the attitude of

the individuals is based on knowledge, skills and motivation. Therefore, access to information and the type of information received are key contributors to attitude formation. Students enjoy learning more and learn better when what they are studying is of personal interest and relates to their lives (Akey, 2006).

Again from Table 4.2, 42 out 54 representing (78%) of the respondents from St John Boscos college disagreed with the statement that they will not have a bright future by choosing Agricultural Science as against 12(22%) of the respondents who agreed to the statement. Also 50 representing (86%) of the respondents from Gbewaa College of Education disagreed with the statement as against 8 (14%). Per their responses, respondents form both colleges perceived agriculture as important. It is common knowledge that jobs that have you sitting in an air conditioned office are seen as well paid jobs and prestigious. Also, in terms of payment and conditions of service compared to other professions, farming is seen not as attractive. The findings of this study contradicts Blackburn(1999) who noted that current generation view Agricultural Science only in terms of narrow stereotype-a farmer, a cow and/or a tractor and that farming is often viewed as a job for people with little opportunities for achievements in life.

Generally, the attitude statements indicated that respondents of both colleges have a positive attitude towards the teaching and learning of Agricultural Science. This is consistent with the findings of (Darko et. al. 2016; Thoron &Burleson, 2014; Onuekwusi & Okorie, 2008 and Joshua, Pur & Gwary 2008) that students had positive attitudes towards Agricultural Science. Even though respondents showed a favourable attitude towards Agricultural Science, majority of respondents from Gbewaa College of Education disagreed with the statement that Agricultural Science is easier studying as compared to other subjects.

4.3 Factors Influencing Students Attitudes towards the Study of Agriculture

This research question sought to explore the factors influencing students attitude towards the study of Agricultural Science.

Table 4.4: Factors Influencing Students Attitudes towards the Study of Agriculture

Statements		SD		D		U		A		SA		TOTAL	
	College	F	%	F	%	F	%	F	%	F	%	F	%
I. I think my Agricultural Science tutor is not handling the subject well.	B	25	46	18	33	1	2	7	13	3	6	54	100
	G	26	45	21	36	2	4	6	10	3	5	58	100
2. I think. Agricultural Science is for weak students	B	43	80	10	18	0	0	1	2	0	0	54	100
	G	43	74	12	20	0	0	1	2	2	4	58	100
3. I experienced repeated failure in Agricultural Science.	B	30	55	21	39	1	2	2	4	0	0	54	100
	G	26	45	24	41	6	10	1	2	1	2	58	100
4. I was persuaded not to choose Agricultural Science as an elective subject.	B	21	39	20	37	1	2	9	17	3	5	54	100
	G	20	34	21	36	7	12	9	16	1	2	58	100
5. I see no difference in the skills and practice in agriculture at home and what is taught in school	B	20	37	16	30	4	7	12	22	2	4	54	100
	G	20	34	30	52	3	5	4	7	1	2	58	100
6. I am not motivated enough to study Agricultural Science.	B	7	13	17	31	1	2	21	39	8	15	54	100
	G	6	10	15	26	3	5	26	45	8	14	58	100
7. The government is not supporting the agricultural sector enough to encourage students to study the subject.	B	2	4	1	2	0	0	11	20	40	74	54	100
	G	2	4	3	5	0	0	24	41	29	50	58	100
8. I believe agriculture is for the old and illiterate.	B	42	78	11	20	1	2	0	0	0	0	54	100
	G	48	82	8	14	0	0	2	4	0	0	58	100
9. I believe Agricultural Science is for males	B	34	63	16	30	0	0	3	5	1	2	54	100
	G	39	67	16	28	0	0	3	5	0	0	58	100
10. Agricultural Science is for people with farm background	B	32	59	15	28	1	2	4	7	2	4	54	100
	G	33	56	21	36	2	4	2	4	0	0	58	100

Source: field data, June 2015

Legend: B =St. John Bosco's College of Education G =Gbewaa College of Education

SD= Strongly Disagree D= Disagree U= Undecided A= Agree SA= Strongly Disagree

From Table 4.4, it can be observed that 43 out of 54 respondents from Boscos College of Education disagreed with the statement that their agric tutors are not handling the subject well. Gbewaa College of Education also recorded 47 out of 58 respondents who disagreed with the statement. The results obtained from both colleges are an indication that students have no problem with the way Agricultural Science tutors are handling the subject in both colleges. This is consistent with what was noted by Curran and Rosen (2006) that the instructor's personality is significant influence on student's attitude towards their courses of which Agricultural Science is not an exception. If concepts in Agricultural Science are not well taught, students will develop negative attitude towards the subject. This also supports what was noted by Ayaaba (2013) that instructors who are not well trained with requisite knowledge and skills end up teaching students to learn by rote and not to understand the concepts and apply. Lack of meaning of concepts could influence the attitude of students towards the subject.

Majority of respondents do not perceive Agricultural Science to be a subject for weak students. 53 out of 54 respondents from St. John Boscos College of Education disagreed with the statement whiles 55 out of 58 respondents from Gbewaa College of Education disagreed with the statement that Agricultural Science is for weak students This confirms their earlier submission that agric is a difficult subject. The results suggest that respondents from both colleges do not regard Agricultural Science as a subject for weak students. The results obtained from this study, defeats the findings made of (Al-shenaifi, 1993) that students take the impression that Agricultural Education is for weak students and therefore the reason for not enrolling in Agricultural courses.

It can be observed again from Table 4.4 that 50 out of 54 respondents from St. John Boscos College disagreed with the statement that they experience repeated failure in Agricultural Science. Also 50 out of 58 respondents from Gbewaa College of Education disagreed that they experience repeated failure in Agricultural Science. This is an indication that students performance in Agricultural Science has been good even though some perceive the subject to be difficult. The finding is consistent with Nicolaidou and Philippou (2003) that repeated failures or problems when dealing with agricultural tasks could influence attitude and these attitudes may become relatively permanent and in effect, influence enrolment.

As depicted in Table 4.4, 41 out of 54 respondents from St. John Boscos College of Education and 41 out of 58 respondents from Gbewaa College of Education disagreed with the statement I was persuaded not to choose Agricultural Science. In all 82 respondents disagreed with the statement that they were not persuaded to choose Agricultural Science as against 22 respondents. This is contrary to what was noted by Shrigley (1978) and Koballa(1994) that Persuasive Communication could be used to change the attitude of people. It also defeats the findings of Ajzen and Fishbein (1975) that humans are basically rational information processors; hence, their beliefs, attitudes and behaviour can be influenced by the information available to them.

Table 4.4 again indicates that 36 out of 54 respondents from St. John Bosco's college of Education and 50 out of 58 respondents from Gbewaa College of Education disagreed with the statement that there is no real difference in agriculture practiced at home and in school. Clearly majority of students see a difference in the agriculture taught in school and what is practiced at home. This is evidenced in their response to the statement that Agricultural Science provides them with useful knowledge and

skills in table 4.3. Their responses to statements as presented in Table 4.3 indicate the relevance agriculture education is to the students. The results is not consistent with (Baffour-Awuah, 1996) who reported that students have poor attitude towards Agricultural Science and this may be due to students seeing no real difference in the skills and agricultural practices at home and what is taught in school.

As can also be seen in table 4.4, 30 out of 54 respondents from St. John Boscos College of Education and 34 out of 58 from Gbewaa College of Education agree that they are not motivated enough to study Agricultural Science. The results obtained are consistent with the findings of Tatto (2007) that the success in teaching and learning has been determined largely by the ability to motivate both students and teachers. Making the teaching and learning of agriculture topics more relevant to student's lives helps them see the value of the subject and in turn motivate them to develop a better attitude towards Agricultural Science. It also supports Saville-Troike (2006) that the amount of effort that students show during the learning process depends on how motivated they are to learn. The more motivated students are, the more and easier they will learn.

It can also be observed from Table 4.4 that 51 out of 54 respondents from St. John Boscos College of Education and 53 out of 58 respondents from Gbewaa College of Education agree that the government is not supporting the agricultural sector enough to motivate students to study Agricultural Science. It is no secret that agriculture is not promoted right from the basic schools to the senior high schools by government. Lack of government support in providing teaching learning materials and in-service training to Agricultural Science tutors to deliver their lessons effectively has contributed immensely to student's poor attitude towards the subject. Also, there are less job opportunities in the agric sector and the youth who are interested in farming

do not get the necessary support from the government to take up the farming business. Every government wants to achieve food sufficiency for its people yet the support for the sector is limited. Students need to be trained and given the requisite knowledge and skills to contribute to the development of the nation. We can create jobs, reduce poverty, have rural urban migration and street hawking stopped by applying the knowledge and skills gained in Agricultural Science lessons in school to our lives. The results supports (UNEP,2012) that Ghana still have the potential of increasing productivity and exporting agricultural produce if government support the sector rather than importing and relying on foreign aid.

Also as depicted in Table 4.4, majority 53(98%) and 56(96%) of respondents from St. John Boscos and Gbewaa College of Education respectively disagreed with the statement that agriculture is for the old and illiterate. However, the 2010 population and housing census report indicated a high illiteracy rate among agricultural household members in Ghana (GSS 2013). The high proportion of illiteracy among the agriculture population has serious implications as the implementation of modern farming technologies are concerned. Research has also shown compelling evidence of ageing farmer population in the country. The average age of farmer in Ghana is 55 years and life expectancy averages between 55 – 60 years (MoFA, 2011). It is therefore necessary to encourage the youth to participate in agriculture. The results of the study is consistent with Weir (1999) that literacy and numeracy help farmers to acquire and understand information and to calculate appropriate input quantities in a modernizing or rapidly changing environment. It is also consistent with Dotse (1994) that Agricultural Science is an important component of the school curriculum and that the problem confronting Ghana's agriculture can partially or completely be solved through Agricultural Education.

Results from Table 4.4 again indicates that 50 out 54 (93%) respondents from St. John Boscos College of Education and 55 out 58 (95%) respondents from Gbewaa College of Education disagreed with the statement that Agricultural Science is for males. Quite a number of studies have shown that there are differences in the beliefs held by females and males. Per the results displayed in Table 4.4, majority of both sexes perceived Agricultural Science to be for both males and females and this could be due to the fact that culturally, both males and females take part in farming activities in most parts of Ghana particularly in the Upper East Region of Ghana. This is inconsistent with the findings of (Eshun, 2004; Skaalvik and Skaalvik, 2004; Asante, 2012; Sanchez, Zimmerman and Ye, 2004; Ma and Kishor, 1997) that farming activities are perceived as the domain of males (men) and they are more likely to enrol in Agricultural related vocation than females.

Lastly, it can be observed in table 4.4 that 47 out of 54 respondents from St. John Boscos College of Education and 54 out of 58 respondents from Gbewaa College of Education disagreed with the statement that agric is for students with a farm background even though most of the respondents come from a farm background.

Aside the factors in Table 4.4, respondents were given an open ended question in the questionnaire to mention other reasons why students may seem not interested in Agricultural Science. Students gave a lot of varying responses and these were put into various teams and analyzed by the researcher.

Table 4.4.1: Other Factors Influencing Students Attitude towards Agricultural Science

Responses	(f)	(%)
Agricultural Science is not taught practically in the colleges	25	21
Persons involved in agriculture are not respected	20	17
Limited time for Agricultural Science lessons	2	2
Lack of motivation	21	18
Limited TLMs for practical lessons	25	21
Limited Agricultural Science teachers	3	3
Agricultural Science is not taught at the basic school	2	2
Low prospects in agriculture	3	3
Agricultural Science course content is broad and difficult	10	9
Agricultural Science is often seen as a form of punishment	1	1
No response	4	3
Total	116	100

Source: Field Data, June 2015

As depicted in Table 4.4.1, 25(21%) of the respondents reported that the lack of practical lessons makes Agricultural Science lessons more theoretical rather than practical. This makes lessons difficult to understand. One of the respondents reported that "field trips are not organised to enable students see in situ what is learnt in class''. The findings of this study support Awuku, Baiden, Brese and Ofosu's (1991) that the best way to teach agriculture is by 'doing'.

Another major concern shared by respondents was inadequate teaching and learning materials (TLMs). Inadequate TLMs hinders effective teaching and learning

of Agricultural Science. This calls for Colleges of Education to consider practical Agricultural Science during lesson delivery. Seawell (1990) confirms that without adequate TLMs, Agricultural Science lessons will become unyielding, unexciting, and impracticable.

Again 21(18%) respondents reported that lack of motivation for Agricultural Science students and scholarship for Agricultural Science students and teachers and other forms of recognition like best Agricultural Science Tutor and best Agricultural Science student contributed to students' poor attitude towards the subject. This is supported by Tatoo (2007) who noted that success in teaching and learning has been determined largely by the ability to motivate both teacher and students along productive lines.

Also, from Table 4.4.1, 20(17%) respondents indicated that persons involved in agriculture are often not respected and this could influence student's attitude towards Agricultural Science.

4.4 Ways of Improving Students Attitudes towards the study of Agricultural Science

The research question sought to find the views of Students on how to motivate students to develop positive attitudes towards Agricultural Science. Questionnaires were administered to students to solicit their views on how to motivate students to develop positive attitudes towards Agricultural Science.

Table 4.5: Ways of Improving Students Interest in Agricultural Science

Responses	f	%
Agricultural Science lessons should be practical	27	23.27
Tutors and students should be motivated	24	20.68
TLMs for practical lessons should be provided	24	20.68
Professional training for Agricultural Science tutors	14	12.06
Time for Agricultural Science lessons should be increased	7	6.03
More government support for the Agric. sector	20	17.24
Total	116	100

Field Data, June 2015

From table 4.5, 27 (23%) of the respondents were of the view that Agricultural Science requires practical demonstration. This therefore suggests that Agricultural Science lessons should be more practical than theoretical to motivate students. They added that Practical lessons could be organised outside the school to study real situations to deepen understanding of what is taught in class and to develop student's interest in Agricultural Science. This is consistent with Awuku, Baiden and Ofosu (1991) that the best way to teach agriculture is by' doing'.

Another significant observation made from the responses of respondents was the fact that tutors and students were not motivated enough to develop favorable attitudes towards Agricultural Science. From table 4.5, 24 (21%)of the respondents shared that view. Saville-Troike (2007) confirms that the amount of effort that students show during the learning process depends on how motivated they are to learn. The more motivated students are, the more and easier they will learn.

Another major concern shared by students was that lack of TLMs for teaching the subject has resulted in students dislike for the subject. But Nacino-Brown, Oke and

Brown (1982) noted that the mere use of these Teaching Learning Materials does not guarantee effective teaching and communication. It is the careful selection and skilful handling by the teacher that renders them useful in facilitating learning.

From Table 4.5, 20(17%) of respondents were of the view that inadequate support from government in the Agriculture sector contributes to the poor interest in the sector. They therefore suggested that government should make the sector attractive by instituting favourable policies for the sector, build more Agriculture schools, and provide funds and award packages for Agric Tutors and students. This is supported by (UNDP, 2013) that Ghana still have the potential of increasing productivity and exporting agricultural produce if government support the sector rather than importing and relying on foreign aid.

Again from Table 4.5, it is depicted that 14(12%) of respondents were of the view that Professional training of Agricultural Science tutors can help motivate students. Students reported that, there should be regular in-service training for Agricultural Science teachers to enable them be abreast with new developments and new methods of delivering their lessons. Teaching and learning are dynamic processes which regularly need changes to meet the rapidly changing needs of the country and the world at large. Nacino-Brown, Oke and Brown (1982) confirm that the mere use of these Teaching Learning Materials does not guarantee effective teaching and communication. It is the careful selection and skilful handling by the teacher that renders them useful in facilitating learning.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 Summary

The study evaluated the attitude of students in both Gbewaa and St. John Boscos College of Education in the Upper East Region of Ghana. Convenience sampling technique was employed to get a sample size of 120 respondents from both Gbewaa and St. John Boscos College of education. Questionnaire was used to collect primary data on student's bio characteristics, attitude towards the study of Agricultural Science, factors influencing student's attitude towards Agricultural Science, and methods used to motivate students to develop positive attitude towards Agricultural Science. The five-point Likert type questionnaire was used and students were asked to select one level of agreement for each statement to indicate how they feel towards Agricultural Science. All items were scored on a 5-point scale ranging from 1(strongly disagree) to 5 (strongly agree). Also, two (2) open ended questions was provided for students to freely express how they feel about the subject and what can be done to motivate students develop positive attitudes towards Agricultural Science. Internal consistency was checked using Cronbach alpha coefficient and it was found to be 0.89.

The results indicated that students in both colleges of education had favourable attitudes towards the study of Agricultural Science per their response to the attitude statements. However some students perceived Agricultural Science to be difficult.

Lack of practicals, Inadequate teaching learning resources, lack of motivation for teachers and students, inadequate government support and wrong perception of

persons involved in agriculture were the major factors influencing student's attitude towards the study of Agricultural Science.

Also, students suggested that motivation for teachers and students, making Agricultural Science lessons more practical than theory, adequate use of teaching learning resources and increase government support for the Agricultural sector could help improve students interest in Agricultural Science.

5.1 Conclusion

Based on the findings, one may conclude that both males and females had favourable attitude towards the study of Agricultural Science. Also, from the results one may conclude that the attitude of students with farm background and students without farm background towards the study of Agricultural Science was good. Again, from the results it can be concluded that the difference in attitude of students who pursued Agricultural Science at senior high school and those who did not was not significant. Per the responses of respondents to the attitude statements, it can be concluded that students of St. John Bosco's and Gbewaa Colleges of Education had favourable attitude towards the study of Agricultural Science. However, some of the respondents perceived Agricultural Science to be difficult. This implies that if students believe that it is easy for them to perform, then they are likely to learn the subject but if they perceive the subject to be difficult, they will not be motivated to choose the subject as an elective subject. Conclusively, respondent's perceptions about their own abilities influenced their attitude towards the subject.

Again, the study concluded that lack of practical lessons in Agricultural Science, inadequate teaching learning resources, lack of motivation, lack of government support in the Agricultural sector and the lack of respect for persons

involved in agriculture also played a key role in influencing student's attitude towards the study of Agricultural Science.

Lastly, from the findings of the study, it can be inferred that if the factors influencing student's attitude towards the study of Agricultural Science are addressed, student's interest in Agricultural Science would be greatly improved.

5.2 Recommendations

The study recommends a combination of practical and theory lessons in Agricultural Science. Imparting both knowledge and skills are key in improving the interest of students in Agricultural Science. The educational system in Ghana aims at training students to become productive. Therefore, practical agriculture should be an essential component of the school curriculum.

Government and administrators of the colleges of education should help provide adequate and appropriate teaching learning resources to enable tutors carry out practical lessons. Government should also provide financial support to the youth who want to go into farming and create more job opportunities in the agricultural sector to motivate the youth.

Agricultural Science tutors and students should be motivated by instituting award schemes like the best Agricultural Science teacher and the best Agricultural Science student like it is done on farmer's day to award our gallant farmers.

Negative perceptions of persons involved in agriculture can be overcome through massive campaign during farmer's day and career days by Agricultural Science tutors, government, district assemblies and all stakeholders to sensitise parents, the youth and the general public on the importance of agriculture.

More research should be carried out by future researchers on the attitude of students towards Agricultural Science in other colleges of education.

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APPENDIX A

Letter to the principal of Gbewaa College of education seeking permission to collect data

St. John Bosco's College of Education

P ost Office Box 11

Navrongo- Upper East Region

22nd June, 2015

The Principal

Gbewaa College of Education

Pusiga- Upper East Region

Dear Sir,

PERMISSION TO COLLECT DATA FROM GBEWAA COLLEGE OF EDUCATION

I am a graduate student from the University for Development Studies and currently working on my master's thesis on the topic ''Teacher Trainee Attitude towards Agricultural Science Education at the Colleges of Education in the Upper East Region of Ghana".

I would be very grateful if am permitted to collect data from the General Arts on the attitude of students towards Agricultural Science to enable me work on my thesis. I would also be grateful if am provided information on:

1) The enrolment of student from 2010-2015
2) Enrolment of students in the agric elective class.

Yours faithfully,

Aurelia Pearl Aduku

APPENDIX B

Letter to the principal of Bosco's College of education seeking permission to collect data

St. John Bosco's College of Education

Post Office Box 11

Navrongo- Upper East Region

22nd June, 2015

The Principal

Bosco's College of Education

Navrongo- Upper East Region

Dear Sir,

PERMISSION TO COLLECT DATA FROM BOSCO'S COLLEGE OF EDUCATION

I am a graduate student from the University for Development Studies and currently working on my master's thesis on the topic ''Teacher Trainee Attitude towards Agricultural Science Education at the Colleges of Education in the Upper East Region of Ghana".

I would be very grateful if am permitted to collect data from the General Arts students on their attitudes towards Agricultural Science to enable me work on my thesis. I would also be grateful if am provided information on:

1) The enrolment of student from 2010-2015
2) Enrolment of students in the agric elective class.

Yours faithfully,

Aurelia Pearl Aduku

APPENDIX C

This is a study conducted on the attitudes of students towards the study of Agricultural Science at the Colleges of Education in the Upper East Region.

Please complete the questionnaire as sincerely as possible. You are assured that your identity and responses will be handled confidentially.

Thank You

Bio data / Background information

1) Please state the name of your college.

   ---

2) ii) Please indicate your age range by ticking

   16-20 ( ) 21-25 ( ) 26-30 ( ) 31- 35 ( ) 36-40 ( )

3) Indicate your sex

   Male ( ) Female ( )

4) Please indicate the programme you offered in the SSS/SHS.

   ---

5) What is the occupation of your parents? ---

Instruction; select one level of agreement for each statement to indicate how you feel.
SD= Strongly Disagree , D= Disagree, U= Undecided, A= Agree, A = Strongly Agree,

Attitudes of students towards the study of Agricultural Science

Statements	SD	D	U	A	SA
1. I hate Agricultural Science.					
2. I feel at ease during Agricultural Science lessons.					
3. I like to spend my spare time doing manual work.					
4. I like studying Agricultural Science because it is easier compared to other subjects.					
5. Agricultural education provides me with useful knowledge and skills.					
6. I will not have a bright future by choosing Agricultural Science as an elective subject.					

Factors Influencing the study of Agricultural Science

Statements	SD	D	U	A	SA
1) I think my Agricultural Science tutor is not handling the subject well.					
2) I think Agricultural Science is for weak students					
3) I experience repeated failure in Agricultural Science					
4) I was persuaded not to choose Agricultural Science as an elective subject.					
5) I see no difference in the skills and practices in Agriculture at home and what is taught in school.					
6) I am not motivated enough to study Agricultural Science.					
7) The government is not supporting the Agricultural sector enough to encourage students study the subject.					
8) I belief Agricultural Science is for the old and illiterate.					
9) I believe Agricultural Science is for males.					
10) Agricultural Science is for people with farm background.					

22) Aside the factors mentioned above, what other factors could influence student's attitude towards the study of Agricultural Science?

.....

.....

.....

23) What ways can student's attitude be improved towards the study of Agricultural Science?

.....

.....

.....

Appendix D

Sex and attitudes of students towards the study of Agricultural Science

```
T-TEST GROUPS=Sex(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=I_hate_AgricSc
  /CRITERIA=CI(.95).
```

Group Statistics

	Sex of respondent	N	Mean	Std. Deviation	Std. Error Mean
I hate agric science	Male	62	1.79	1.282	.163
	Female	50	1.76	1.170	.166

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
I hate agric science	Equal variances assumed	.158	.692	.129	110	.897	.030	.234	-.434	.495
	Equal variances not assumed			.131	108.275	.896	.030	.232	-.430	.491

Appendix E

Occupation of parents and attitude of student towards the study of Agriculture Science

Group Statistics

	Occupation of parents	N	Mean	Std. Deviation	Std. Error Mean
I hate agric science	Farmer	62	1.74	1.241	.158
	Others	50	1.82	1.224	.173

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
I hate agric science	Equal variances assumed	.003	.954	-.333	110	.740	-.078	.234	-.543	.386
	Equal variances not assumed			-.334	105.606	.739	-.078	.234	-.542	.386

Appendix F

Programme of study at SHS and attitudes towards the study of Agriculture Science

```
T-TEST GROUPS=Progrme_of_study_atSHS(1 2)
 /MISSING=ANALYSIS
 /VARIABLES=I_hate_AgricSc
 /CRITERIA=CI(.95).
```

Group Statistics

	Programme of study at SSS/SHS	N	Mean	Std. Deviation	Std. Error Mean
I hate agric science	Others	109	1.80	1.238	.119
	Agric science	3	1.00	.000	.000

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
I hate agric science	Equal variances assumed	3.757	.055	1.112	110	.269	.798	.718	-.625	2.221
	Equal variances not assumed			6.730	108.000	.000	.798	.119	.563	1.033