

Attitude of Trainee Teachers towards the Study of Agricultural Science in the Colleges of Education: the case of Gbewaa and St. John Bosco's Colleges of Education in focus.

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Abstract

The study explored the extent to which parental occupation influenced the study of Agricultural Science in the Colleges of Education in Ghana. 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. 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 and St. John Boscos College of Education in the Upper East Region of Ghana. The results indicated that there was no significant difference in attitude of students with farming background and those without a farming background towards the study of Agricultural Science as a subject. Respondents from both Colleges had favourable attitudes towards Agricultural Science. However, some respondents perceived Agricultural Science to be difficult. It is therefore recommended that government could help provide teaching and learning resources to the Colleges of Education to help Tutors make lessons interesting and meaningful to students and also enhance understanding.

Keywords: Parental occupation, Declining, Enrolment, Farming, Non-farming

1. Introduction

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 about 80% of the population on a formal and informal basis and accounting for almost half of GDP and export earnings (Bodybobton, 2011).

Most agriculture production in the country is subsistence and small scaled with low yields. Even medium and large scale farmers use the common tools like mattock, hoe, axe, cutlass etc since most farmers cannot afford mechanization aside the over reliance on rainfall instead of irrigation (PFAG, 2013). Production has also been low due to poor agricultural practices and farmer to extension officer ratio.

Research suggests that currently there is only one Agricultural Extension Agent to about 1,300 farmers in the country. 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 (PFAG, 2013). The National President of the Peasant Farmers Association, Mohammed Adam Nashiru, said "laudable Government projects like fertiliser and input subsidies will come to naught if agriculture 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). Agricultural education is therefore vital for economic growth and development. It eradicates poverty and allows people to become more productive. Awuku et al (1991) confirmed that one objective for Agriculture education in the school curriculum is to make teachers and students supplementary extension officers to local farmers.

Most students learn Agriculture in the school mainly because it is one of the examination requirements or because it is a core subject and therefore mandatory (Baffour-Awuah, 1996). Studies reviewed found that about 80 percent of youth residing in the rural areas are engaged in agricultural activities, and about 90 percent residing in urban areas are engaged in non-agricultural activities (Adekunle, Oladipo, Adisa & Fataye, 2009). Some researchers observed positive attitudes among students towards the study of Agricultural Science (Darko et al 2016: Thoron & Burlison, 2014: Onuekwusi & Okorie, 2008 and Joshua, Pur & Gwary, 2008) while others observed a negative attitude. Shenaifi (2012) also noted that students who were studying agriculture programs possessed attitudes which were supportive of agriculture as a career field. He also observe that the students of

non-agriculture programs agreed with the statements that agricultural program courses are better suited for male students, and those students pursuing careers in agriculture should enrol in agriculture, more than did students of agriculture programmes. Contrary to these observations some researchers also observed a negative attitude among students towards Agricultural Science. Agriculture is often overlooked especially by students and their peers (Akintade 2013). Many people do not hold positive attitudes toward Agricultural Science

(Kwakye, 2016: Akintade, 2012: Baffour-Awuah, 1996 :Pinda, 2010 & MOFA, 2011). The general public does not generally have positive feelings towards science and scientists (Rogers and Ford, 1997, George, 2000). 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 and Ford 1997). The poor interest and declining enrolment in agricultural education has been a major concern (Baliyan and Nenty, 2015).

It is believed that people's attitudes towards a subject can be influenced by many factors. Mohamed and Waheed (2011) identified three group of factors that play a key role influencing student attitudes; factors associated with the students themselves (example, anxiety, Agricultural Science achievement, self-efficacy and self-concept, motivation and experiences at school) factors associated with the school, teacher and teaching(example, teaching learning resources, classroom management, teacher knowledge, attitude towards Agricultural Science, guidance, beliefs) thirdly, factors from the home environment and society(example, educational background, parental expectations). Myers (1996) confirms that social factors can be enormous enough to induce people to violate their deepest convictions.

Also, as adapted by Dyer & Osborne (2000) in the works of Fishbein & 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 & Zanna,1981; Ajzen & Timko, 1986) confirms that when people's attitudes towards a specific practice is altered, it influences behaviour.

Wildman & Torres (2001) also noted that the sources of influence in selecting Agricultural Science as an elective subject 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 & 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 and 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 their male counterparts. Due to the great influence of attitude on agricultural pursuits, it is worthwhile to examine the attitude of students towards agriculture and identify the determinants of attitude towards Agricultural Science as a subject.

There is low societal recognition of Agriculture not as a noble profession (Ewziem, 2011). Several studies have also shown a decline in student's enrolment into the Agricultural science class. Example, Donnermeyer & Kreps (1994) as cited in the works of Wildman & Torres (2001) noted a decline in enrolment at the colleges of Agriculture across the United States during the past years. Baliyan & Nenty (2015) also confirmed 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 Boscoss College of Education in the Upper East Region of Ghana. Records on enrolment indicate a yearly decline and this is the motivation for the study.

The objectives of this study were therefore to explore some of the attitudes of students towards the study of Agricultural Science as well as examine the correlation between the type of parental occupation of students and attitudes towards the study of agricultural science.

1.1 Methodology

The methodology describes the research methods and the procedures employed in obtaining data and analysis of the data. It consist 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.

The design employed is the descriptive cross-sectional survey. Descriptive surveys according to Best (as cited in 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 (Paul & Lavrakas, 2008.p.1).

For every research design, there are strengths and weaknesses. Some of the strengths of cross-sectional design as described by Paul and Lavrakas (2008) included: 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.

The attitude of students towards the study of Agricultural Science was considered the dependent variable and parental occupation of students, the independent variable. The intention was to examine the attitude of students towards the study of Agricultural Science as well as examine the influence of the dependent variable on the independent variable.

The research was carried out in St. John St.John Boscoss 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 St.John Boscoss 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 St.John Boscoss 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 environments and reducing cost of transportation.

1.1.1 Population and Sample

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 1: General Enrolment of Students

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

Source: Field Data. 2015

A sample refers to the elements selected with the intention of finding out something about the entire population from which it is taken Polit and Hungler (1997) 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 and 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.

1.1.2 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 (Burns and Grove,1993). However, questionnaires has the following weaknesses: is argued to be 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(Burns and Grove, 1993).

1.1.3 Validity and Reliability of the Questionnaires used

Validity is the degree to which an instrument measures what it is intended to measure (Polit and Hungler, 1997).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 22 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

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 and 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.

1.1.4 Data Collection Procedure

Letters were written to both colleges seeking permission to collect data from the two institutions (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 which was intended to assess the attitudes of students towards the study of Agricultural Science as well as their parental background. After designing the questionnaire, it was pre-tested to determine the validity and feasibility of using the questionnaire as well as identifying the time requirements and weaknesses.

1.1.5 Data Analysis Plan

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

1.1.6 Results and Discussion of Findings

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 parental occupation of students and attitudes towards Agricultural Science at the college level. All the respondents were asked to respond to 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.

Research question 1: What are the Attitude of Students towards the Study of Agricultural Science?

Identifying student's attitudes towards Agricultural Science are key in increasing enrolment and participation in the subject. According to Myers (1996, p.130) "an attitude is our association between an object and our evaluation of it". Hence the research question sought to examine the views of students towards the study of Agricultural Science. Their views are presented in Table 2.

Table 2: 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 compare 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 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 2, 43(79%) of the respondents from Boscoss College of Education disagreed with the statement that, they hate Agricultural Science while 48(83%) from Gbewaa disagreed with the statement. 8(15%) and 8(14%) of the respondents from St. John Boscoss 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. 39(72%) and 38(65%) of respondents from St. John Boscoss and Gbewaa College respectively responded favourably to the statement that I feel at ease with Agricultural Science lessons .While 12(22%) from St. John Boscoss 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 Boscoss College of Education, 23(43%) disagreed and 26(48%) respondents agreed with the statement that I 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 Boscoss 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 what was observed by Pinda (2010) that many youths in Tanzania are shunning agriculture due to difficulties they encounter in the sector. He added that farming by using a hoe is almost a torture to the youth and that is why they are not attracted to farming activities, creating a phobia for agriculture in the minds of the youth. This phobia for manual work can be transmitted to the study of Agricultural Science.

The respondents also revealed that although students have performed well in Agricultural Science over the years, some still regard the subject to be demanding and difficult. From Table 2, 23 out of 54(43%) respondents from Boscoss disagreed with the statement that Agricultural Science is easier as compared to other subjects. Also 31 out 58(53%) of the respondents from Gbewaa disagreed with the statement as against 23(40%) respondents who agreed. 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 indicated in Table 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) who reported 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 can only be solved through the teaching of practical agriculture in schools. Also the result is consistent with Dyer and Osborne (2000) who indicated 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 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 disagreed with the statement as against 8 (14%). Per their responses, respondents perceive agriculture as important. It is common knowledge that careers that have you sitting in an air conditioned office are seen as well paid jobs and prestigious. In terms of compensation and conditions of service compared to other professions, agriculture is not attractive. Farming is often viewed as a job for people with little opportunities for achievements in life Blackburn (1999). 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 .

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

Research question 2: What connections exist between the type of parental occupation of students and attitudes towards the study of Agricultural Science?

The purpose of this research question was to examine the correlation between parental occupation and students' attitudes towards the study of Agricultural Science. The responses of the respondents are presented in Table 3

Table 3: 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, 2015

Table 3: 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 ($M = 1.82$, $SD = 1.22$); $t(110) = 0.33$, $p = .74$, two tailed) towards the study of Agricultural Science. (see appendix D 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.

1.1. 7 Conclusion

The study sought to examine the attitude of students towards the Study of Agricultural Science as well as determine if connections exist between the type of parental occupation of students and attitudes towards the study of Agriculture Science. Based on the responses of respondents to the attitude statements, it can be concluded that students of St. John Bosco's College of Education and Gbewaa College of Education had positive attitude towards the study of Agricultural Science. From the results, there was no statistically significant difference in the attitude of students with farming background and students without farming background towards the study of Agricultural Science.

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