

Challenges in the Teaching and Learning of Agricultural Science in Selected Public Senior High Schools in the Cape Coast Metropolis

Ransford Opoku Darko^{1,2}, Christina Offei-Ansah³, Yuan Shouqi¹, & LIU, Jun-ping¹

¹ Research Centre of Fluid Machinery Engineering and Technology, Jiangsu University, Zhenjiang, Jiangsu, P.R. China

² Department of Agricultural Engineering, University of Cape Coast, Ghana

³ Department of Vocational and Technical Education, University of Cape Coast, Ghana

*Correspondence: Ransford Opoku Darko, Research Centre of Fluid Machinery Engineering and Technology, Jiangsu University, Zhenjiang, Jiangsu, P.R. China and Department of Agricultural Engineering, University of Cape Coast, Ghana. Tel: +86-13101925601; E-mail: chiefrodark@yahoo.com

DOI: 10.12735/as.v3i1p13

URL: <http://dx.doi.org/10.12735/as.v3i1p13>

Abstract

The study was conducted in selected Public Senior High Schools in the Cape Coast Metropolis aimed at investigating the challenges in the teaching and learning of Agricultural Science. In all a sample of 78 respondents involving 60 Agricultural Science students and 18 Agricultural Science teachers were involved. The research instrument used for the data collection was questionnaire which was developed by the researcher in two different forms, one for the Agricultural Science students and the other for the Agricultural science teachers. Research findings from the study indicated that the major challenges facing the teaching and learning of Agricultural Science include frequent use of lecture method in teaching, large class size and poor remuneration of teachers. Others include inadequate teaching and learning materials and their availability, difficulty in planning field trips as well as laziness and truancy on the part of teachers. However, it must be emphasized that motivational factors such as one's own interest, having a role model, future ambitions and the supply of adequate textbooks positively affect the teaching and learning of Agricultural Science in Public Senior High Schools in the Metropolis. The study recommends that parents must be educated to understand the important role and prospects the learning of Agricultural Science contributes to the development of a country. Also the Government, Parent Teacher Association (PTA) and other stakeholders must help to improve the service of Agricultural Science Teachers.

Keywords: agricultural science, teaching, learning, education, motivation, textbooks, parents

1. Introduction

Education is seen as a key to national development and this cannot be achieved without sustainable investment in human capital through teaching and learning. This is why education reforms in Ghana have been committed to making the issue of teacher and student quality and its development the

cornerstone of the strategy to improve education quality and increase learning outcomes (Anamuah-Mensah, 2000).

The teaching and learning of an applied science like Agricultural Science consists of learning facts and figures, rules, laws formulae, problem solving, understanding of basic scientific principles of concepts and explanation of concepts and observed phenomena (Ampiah, 2002). It is therefore of utmost significance for the teacher to use the appropriate pedagogy to bring to good understanding and learning of a particular learning task. It is important that aspects of Agricultural Science like understanding of basic scientific concepts, problem solving based on observed phenomenon require a good understanding as well as explanatory and problem solving ability of the student concerned. Unfortunately, students tend to memorize concepts that require analytical thinking and basic knowledge in the concept concerned due to the subject been more theoretical than practical (Resmick, 2000). Facts, rules and laws are memorized but often this information is not connected in a coherent framework that would allow students to make sense of it and therefore learning does not take place.

It is, therefore, very important for any professional teacher to know what decision to make, when to make them and the effect of such decision on the teaching-learning encounter. These decisions, which give direction, purpose, meaning and structure to classroom interaction, provide teaching with its professional touch. This paper reports on the challenges in the teaching and learning of Agricultural Science in Selected Public Senior High Schools in the Cape Coast Metropolis.

2. Methodology

2.1. Research Design and Population

A descriptive research design was used in this research work using questionnaires to solicit views from teachers and students. The questionnaires comprised close-ended items. The respondents were provided with a four-point Likert-type scale made up of the following responses: Strongly Disagree (SD), Disagree (D), Agree (A) and Strongly Agree (SA). The questionnaires given to students had 18 items and that given to teachers had 21 items. Before the research, a pilot test of the questionnaires was done in one school which offered Agricultural Science, not within the sample selected but in Cape Coast Metropolis, and the results were used to correct some anomalies on the instrument. The population of the research was made up of 18 Agricultural Science teachers and 60 students selected in Public Senior High Schools in the Cape Coast Metropolis of the Central Region of Ghana.

2.2. Data Analysis

The frequencies of the items were scored using the point scale and later converted into percentages for discussion. The percentages were used to analyze all the responses. For ease of the analyses, the respondents of strongly disagree and disagree were put together and that of strongly agree and agree were also combined. Frequency and percentage tables were used to describe the data that were collected from the respondents using Statistical Package for Social Sciences (SPSS version 16).

3. Results and Discussion

This study was to ascertain the challenges in the teaching and learning of Agricultural Science in the Public Senior High Schools in Cape Coast Metropolis in the Central Region of Ghana. This chapter presents the results and discussion of the data collected from the field. The data include the level of interest of Agricultural Science students, the background of Agricultural Science teachers in Public Senior High Schools, the use of Teaching and Learning Resources in the teaching of

Agricultural Science, the methods used in teaching by Agricultural Science teachers and the factors perceived by both teachers and students as militating against the quality of teaching and learning of Agricultural Science in the Public Senior High Schools. Frequencies and simple percentages were used to analyze the data.

3.1. Analysis of Main Data of the Study

The responses given by the respondents to the research questions to guide the study are discussed here.

3.1.1. Research Question 1

To what extent do teachers use teaching and learning resources in teaching agricultural science?

The research questions sought to find out the views of both students and teachers on the adequacy of TLR(s) and whether the use of TLR(s) improves understanding and learning in schools. Table 1 and 2 provide detailed information on the above subjects.

Table 1. Adequacy of TLR(s) in the school

Response	Frequency	Percentage
Strongly disagree	55	70.5
Disagree	23	29.5
Agree	-	-
Strongly agree	-	-
Total	78	100

Source: Field Data

From Table 1, out of the total of 78 respondents, 100% disagreed that the school has adequate TLR(s). This means that all the schools do not have adequate TLR(s). Seawell (1990) confirms that without adequate pieces of apparatus and thorough preparation on the part of every teacher, Agricultural Science and Science lesson would become rigid, boring, dull and unrealistic. The uniqueness of the subject therefore results from the variety of materials and experiment necessary for its effective teaching and learning. Nacino-Brown, Oke, and Brown (1982) also have it that the mere use of these materials however does not guarantee effective teaching and communication. It is their careful selection and skilful handling by the teacher that renders them useful in facilitating learning (Bremner, 1990). It is therefore necessary for teachers to have working knowledge of the criteria to use in selecting and evaluating them and principle underlying their effective use.

Table 2. Improvement of understanding and learning due to TLR(s)

Response	Frequency	Percentage
Strongly disagree	-	-
Disagree	-	-
Agree	24	40
Strongly agree	36	60
Total	60	100

Source: Field Data

According to Table 2, 100% of the respondents agreed that the use of TLR(s) in teaching improves understanding and learning. Besides teacher qualifications and school facilities, another important determinant of quality of the education is the teaching and learning resources. It is essential for quality materials to be made available to the teachers and students in adequate quantities to support the teaching and learning processes. Ideally, every student in every class should possess his/her own copy of the textbooks required by the school for each grade and each subject. The textbooks may be new or previously used by other students. Textbooks may be provided by the school, their parents, friends or other bodies such as NGO.

3.1.2. Research Question 2

What teaching methods are mostly used by teachers in teaching agricultural science?

The research question sought to find out the views of teachers on the methods used in the teaching of Agricultural science, the choice of method used, whether the lecture method permits rapid cover of materials and also whether the teaching techniques and methods used by teachers influence the students' ability and interest to learn. Table 3 and 4 provides detailed information on the above subjects.

Table 3. Methods used in the teaching of agricultural science

Responses	Frequency	Percentage
Lecture	8	44.4
Field trip	2	11.1
Demonstration	2	11.1
Hands-on experience	5	5.6
Discussion	1	27.8
Total	18	100

Source: Field Data

In Table 3, the question relating to the method used by respondents in the teaching of Agricultural Science reveals that 44.4% of the respondents used the lecture method, 22.2% of the respondents either use field trip and demonstration, 5.6% by Hands-on experiment and 27.8% is by discussion. This confirms the assertion made by Awuku, Baiden, Brese, and Ofosu (1991), that it is not always easy to define good teaching method. Teachers may appear to be well organized and efficient but this in itself will not guarantee that pupils acquire knowledge. Teaching and learning are complex processes that are subject to many social cultural and economic influences. 100% of the respondents agreed that the choice of method used in teaching greatly is dependent on the teacher.

Table 4. Lecture method permit rapid cover of topics

Response	Frequency	Percentage
Strongly disagree	1	5.6
Disagree	2	11.0
Agree	5	27.8
Strongly agree	10	55.6
Total	18	100

Source: Field Data

When the question of whether lecture method permits rapid cover of topics, 83.4% of the respondents agreed while 16.6% disagreed with this assertion (Table 4). According to Tamakloe, Amedahe, and Atta (2005), lectures are a straightforward way to impart knowledge to students quickly. Teachers also have a greater control over what is being taught in the classroom because they are the sole source of information. Pullan (1993) confirmed the use of the lecture method as familiar to most teachers because it was typically the way they were taught. However, he emphasized that students can find lectures boring causing them to lose interest. Teachers may not get a real feel for how much students understand because there is no much opportunity for exchanges during lectures.

3.1.3. Research Question 3

What factors do teachers and students perceive as militating against quality of teaching and learning of agricultural science in public senior high school?

The research question sought to find out the views of both teachers and students the factors that militate against the teaching and learning of Agricultural Science in Public Senior High Schools.

Table 5. Contains detailed information of the results obtained

Table 5. Percentage response of teachers and students on the challenges to agricultural science education in public senior high schools

Statement	TEACHERS				STUDENTS			
	Agree		Disagree		Agree		Disagree	
	No	%	No	%	No	%	No	%
1. Teacher absenteeism and lateness makes learning of the subject difficult.	18	100	0	0	60	100	0	0
2. Laziness negatively affects the learning of the subject.	16	88.9	2	11.1	56	93.3	4	6.7
3. Poor remuneration/lack of motivation makes Agricultural science unattractive.	18	100	0	0	49	81.7	11	18.3
4. Large class size makes the teaching of Agricultural science and practical work difficult	18	100	0	0	46	76.7	14	23.3
5. Difficulty in planning field trips	15	83.3	3	16.7	55	91.7	5	8.3
5. Lack of TLR(s) hinders the teaching and learning of the subject.	14	77.8	4	22.2	40	66.7	20	33.3
7. Lack of interest affects the teaching and learning of the subject.	18	100	0	0	60	100	0	0

Source: Field Data

Questionnaires were given to both teachers and students to solicit their views and the following came out as the major obstacles to the teaching and learning of Agricultural Science.

Absenteeism and lateness of teachers were identified as a hindrance to effective teaching and learning of Agricultural Science. All the 18 teacher respondents and 60 student respondents agreed to this assertion. Some of the students the researcher interacted with claimed that the situation makes it difficult for the teachers to finish the syllabus on time. Koomson, Akyeampong and Fobih

(1999) studied the management of instructional time in some Ghanaian public schools and found out that about 50% of the instructional time on the average is wasted due to several factors which include late starting of schools and absenteeism on the part of teachers and students. This has reduced instructional time and has resulted in low academic achievement. Thus it appears teachers' lateness and absenteeism are contributing factors to the difficulty in teaching many subjects including Agricultural Science.

An equally significant observation made in the study was that students and some teachers of Agricultural Science are lazy. This attitude negatively affects the teaching and learning of the subject. Effective teaching and learning of Agricultural Science call for adequate practical work on the field. Unfortunately the wrong perceptions of students often make them see practical work as punishment. Others also dodge the practical lessons due to laziness. This makes it difficult for teachers to link theory to practice. This issue was admitted by 88.9% and 93.3% of teacher and student respondents respectively. Field trips have enhanced Agricultural Science classes. Study trips enrich the school curriculum and when they are properly organized can help students to develop keen interest in a subject. According to Sweeter (1984), successful and safe field trips are determined by explicit planning. Hazards do occur or exist on field trips, but with good planning and purposeful directions, pupils could have a safe and worthwhile experience.

Another major concern shared by both teacher respondents and student respondents were the fact that poor remuneration and lack of motivation for Agricultural Science students and teachers often makes the subject unattractive. All teacher respondents admitted to this while 49 representing 81.7% of the student respondents agreed to this. Some of the teachers interviewed were of the view that lack of scholarship for Agricultural Science students and teachers and other forms of recognition like the best Agricultural Science Teacher Award makes the teachers and students feel they were not needed and respected. According to Tatto (2007), success in teaching and learning has been determined largely by the ability to motivate both students and teachers along productive lines. As part of the motivational devices, they suggested that Agricultural and Science clubs should be provided for a wide range of student capabilities, interests and individual differences for students to share and exchange valuable learning in the course of these co-curricular activities.

Another important revelation from the study was the fact that inadequate TLR(s) hinders effective teaching and learning of Agricultural Science. This situation often makes it difficult for teachers to take students through practical work. Students only learn names of tools and their uses without having a feel of the tool and how to handle it. Seawell (1990) and Bilgin (2006) confirm that without adequate pieces of apparatus, Agricultural Science and Science lesson would become rigid, boring, dull and unrealistic. The uniqueness of the subject therefore results from the variety of materials and experiment necessary for its effective teaching and learning. Nacino-Brown *et al.* (1982) also has it that the mere use of these materials however does not guarantee effective teaching and communication. It is their careful selection and skilful handling by the teacher that renders them useful in facilitating learning.

It was also found out from the study that many students do not have interest in the subject. All the teachers and the students who responded to this statement responded in the affirmative. When the researcher probed the issue further, it came to light that students have wrong perception about Agriculture Science. They believe Agriculture Science is not a well-paid job and also farmers do not have prestige. This wrong perception often influences the choice of Agricultural Science programme as a career. Selmes (1974) maintained that the need for achievement is an internal state of arousal that led to vigorous, persistent goal oriented behavior. Tamakloe *et al.* (2005) also indicated that the learning experience which the learner grapples with must be such that he derives self satisfaction from it. This serves to provide the necessary motivation for wishing to undergo the same or similar experiences.

4. Conclusion

Based on the findings of this work, the following conclusions have been arrived at,

- a. Motivational factors such as one's own interest, having a role model, future ambitions and the supply of adequate textbooks positively affect the learning of Agricultural Science.
- b. For an effective and efficient delivery of Agricultural Science lessons, the background of the teacher is necessary. The teacher should be professionally trained and his/her area of expertise must be Agricultural Science.
- c. Teaching and learning of Agricultural Science in the Public Senior High Schools are facing challenges. These include frequent use of lecture method in teaching since teachers want to complete syllabus, large class size and poor remuneration and motivation of teachers. Others include inadequate teaching and learning resources and their availability, difficulty in planning field trips as well as laziness and absenteeism on the part teachers.

Acknowledgement

The authors thank the Teaching Practice Unit, University of Cape Coast and the Research Centre of Fluid Machinery, for their support in this research work.

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