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ARTICLES AND RESEARCH REPORTS ON SCIENCE

ASSESSMENT OF TEACHERS' PERCEPTION ON AGRICULTURAL SCIENCE TEACHING METHODS IN NIGER STATE, NIGERIA

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Abstract
The study was conducted in Niger State, Nigeria to evaluate agricultural science teacher's perception of the agricultural science teaching methods. A total of 50 respondents were randomly sampled. Data for the study were obtained through the administration of questionnaire and were analysed using descriptive statistics such as frequency, percentage, ranking and mean. Agricultural science methods highlight the obvious fact that instructional process is a two-way communication process between the instructional agent and the learner. The study revealed that majority (70%) of the teachers were still in their active and productive age, 74 % of the respondents were male and larger proportions of the teachers (94%) were qualified and professionally trained teachers. Lecture method ranked 1st as the most frequently used method by the agricultural science teachers, the teachers however, perceived demonstration method as the best method of imparting agricultural knowledge and skills. The research findings also showed that majority (82 %) of the respondents agreed that students had unfavourable attitude toward agricultural science as a subject and were usually not actively involved in agricultural science lessons and practicals. Agricultural science teachers perceived the following teaching methods as more relevant in imparting agricultural knowledge and skills: demonstration (3.84), field trip (3.77), discovery method (3.62) and laboratory method (3.26), similarly, the teachers also perceived the following challenges in teaching agricultural science as serious challenges: students background; lack of interest on the part of both the teachers and students and the attitude of general public towards agriculture as a profession. It was therefore, recommended that demonstration method be given topmost priority in imparting agricultural knowledge and skills. Also enabling environment should be created for the adoption and use of modern techniques in practicing agriculture, to minimize the drudgery associated with farming to motivate young school leavers to take agriculture as a profession.

Key words: Agricultural science, teachers, perception, teaching methods,

Introduction

Agricultural science is one of the core vocational curricular subjects taught at secondary and in some higher institutions in Nigeria. According to Egbule (2004), it is a process of training learners in the process of agricultural productivity as well as the techniques for teaching of agriculture. Because of it promising role in promoting self reliance through the provision of employment opportunities and production of staple food for the populace together with raw materials for the agro allied industries. Its teaching as a course offering in our schools and colleges has been made compulsory by the Federal Government (Daluba, 2013). Agricultural science is therefore designed for inculcation of the necessary skills for the practice of agriculture for effective citizenship and contribution to food security for national sustainability

(Modebelu & Nwakpadolu, 2013). In an attempt to achieve this national agricultural goal, the Federal Republic of Nigeria (FGN) outlined several objectives of teaching and learning of agricultural science to include the following:

(i) to stimulate and sustain student interest in agriculture
(ii) to inculcate in students farming skills
(iii) To enable students acquire basic knowledge and practical skills in agriculture
(iv) to prepare students for further studies in agriculture
(v) to produce prospective future farmers
(vi) to expose students to opportunities in agriculture (FRN, 1994 and FRN, 2009)

According to Modebelu and Nwakpadolu (2013), attainment of the above objectives depends on teachers' factors such as the various teaching methods used and the pedagogical approaches, agricultural science teachers are trained and groomed from teachers preparation institutions for quality impact of agricultural skills, knowledge, attitude and values for self reliance, promotion of agriculture and for food security in their future lives. Hence it is the responsibility of the teachers to use appropriates methods of teaching to stimulate and sustain students interest in agriculture, that enable them acquire knowledge with skills in agriculture, as well as Prepare and expose students for occupation.

It is generaly believed that what students learn is greatly influenced by how they are taught. Teachers teaching agricultural science used varieties of methods, which fit different niches within the agricultural classroom (Allen et alt., (n.d.). Some of these teaching methods are completely out of phase with background and local environment of the learners particularly in Nigeria, also some methods are foreign in nature and have no bearing with Nigeria culture and purely derived from other western cultures (Achor et al., 2009).

Teaching Methods

Lecturing remains one of the more popular method of transmitting information and ideas by the teachers, trainers and speakers, for subjects that are practically oriented like agricultural science, lectures can be informative, boring and overwhelming depending on the compelling nature of the massage and the presenter style and clarity of the massage. Lecture method which is popularly used by agricultural science teachers in Nigeria is usually one-way traffic and allows for little or no audience participation. Here the teacher is seen as the repository of all knowledge while the students are passive (Abdulhamid, 2013; Gbamaja, 1991).

Demonstration method refers to the type of teaching method in which the teacher is the principal actor while the learners watches with the intention to act later, here he does whatever the learners are expected to do at the end of the lesson by showing them how to do it and explaining step-by-step process to them inform of exhibition, this is referred to as method demonstration, while result demonstration is used to show the result of doing something in a particular way (Ameh et al., 2007; Mundi, 2006).

Discussion method involves a group of people or class who get together in order to exchange ideas, facts and opinions orally about a topic of mutual concern and interest. The teacher acts as a conference leader and direct and redirect ideas and information produced by the students. He listens to what is said by each individual student in the group as this give an insight into level of knowledge and understanding of the subject matter (Timothy, 2009).

Field trip is a planned visit to a place of interest outside the class room to obtain information. The method is used to broaden the knowledge of the students as this could see and hear more than what they are told in the class room, the students usually get first hand information and

the method often encourage mutual relationship between the school and the community (Timothy, 2009).

Laboratory method is a scientific approach which the teacher leads the students in the process of conducting a test to produces a particular product; it also involves explaining step-by-step process to them. The teacher is also the principal actor while the learners watch with the intention to act lather.

Discovery method allows the students total freedom to find out things for themselves under the guidance and the supervision of the teacher, the teacher however has the predetermined results to be compared with those of the students, students could also discover new things that even the teachers have not discovered, as it is popularly believed that "discovery is the mother of invention".

Not all teachers of agriculture are competent, many university graduates and other graduates from sister institutions trained in specialised areas of agriculture accept teaching as a stepping stone to better jobs, other teachers do not have adequate professional training. A competent teacher of agriculture in schools requires technical knowledge in agriculture as well as good knowledge of teaching methods and learning process. These qualities are however, lacking in many agricultural science teachers. Therefore, teachers must find the most suitable method or combination of methods to teach the students to obtain best results, this will however, be affected directly or indirectly by their perception of various teaching methods.

Objective of the Study

The objective of the study was to determine agricultural science teachers' perception of the relevance of the selected teaching methods in teaching agricultural science for obtaining best results. Specifically, the study was carried out to:

(i) examine the demographic characteristics of the agricultural science teachers;
(ii) determine the various teaching methods employed by teachers and the most frequently used by them
(iii) determine teachers' perception on students' attitude and nature of their involvement in agricultural science lesson and practical; and
(iv) determine the perception of the teachers on the challenges faced in teaching and learning of agricultural science.

Methodology

The study was a descriptive survey design that elicited relevant information on the respondents' perception of the relevance of various agricultural science teaching methods in imparting agricultural knowledge and skills in Niger State, Nigeria. Purposive sampling method was used to select all the agricultural science teachers in agricultural Zone ii of Niger state agricultural and Mechanization Development Authority, a total of 50 respondents were sampled for the study. Data for the study were analyzed using descriptive statistics such as frequency distribution, tables, percentages, ranking and mean values. A 4-point and 5-point Likert type of scale were used to analyze data on respondents' perception on the various agricultural science teaching methods and constraints faced by agricultural science teachers respectively.

For respondents, perception on teaching methods, Likert rating scale used were: very relevant (4 points), relevant (3 points), slightly relevant (2 points) and not relevant (1 point) the critical mean 2.5 derived from 4-point likert rating scale values (4+3+2+1/4). Also 4-point rating scale was used to described agricultural science teacher's perception of the various teaching

methods. The perception scores greater than or equal to critical mean of 2.5 are considered as relevant method for the teaching of agricultural science. For the constraints 5-point rating scale were used: very serious (5 points), serious (4 points), not sure (3 points), not serious (2 points) and not very serious (1 point) the scores were weighed and weighted average found as used by (Odinwa et al., 2011). The critical mean 3.0derived from 5-point likert rating scale (5+4+3+2+1/5) was used to describe agricultural science teachers' perception of the constraints faced. The constraints score greater than or equal to critical mean of 3.0 depicts serious constraint to the teaching of agricultural science.

Results and Discussions

Age: The results in Table 1 revealed that majority (70%) of the respondents were below 46 years. This implies that majority of the agricultural science teachers are still in their active and productive age. This is good for agricultural science teachers because teaching of agriculture especially the practical lessons requires strong and energetic individuals. This is consistent with the findings of Modebel and Nwakpadolu (2013), who pointed out that the practice of agriculture is energy sapping, particularly where crude implements are in use, as it requires active and energetic individuals.

Marital Status: The entries in Table 1 showed that larger proportions (80%) of the agricultural science teachers were married. This implies that majority of the teachers were matured and have the ability and the capacity to impart knowledge more responsibly. This will directly or indirectly influence their relationship with the students.

Educational status: the result in Table 1 revealed that 94% of the respondents had one form of education or the other and were also qualified professionally trained teachers because they possessed teachers training qualifications. This implies that majority of them are armed with the principles and practice of teaching agricultural science. This is in agreement with the findings of Afred et al. (2009) who indicated that competent teachers of agriculture in school requires technical knowledge in agriculture as well as good knowledge of teaching and learning processe.

Teaching Experience: Table 1 indicated that 90% of the agricultural science teachers have been teaching agricultural science as a subject for more than 10 years. This implies that majority of the agricultural science in the study area were experienced teachers. This will directly or indirectly affect their use of different teaching methods in imparting agricultural science knowledge because it is believed that experience is the best teacher.

Table 1: Socio economic characteristics of the respondents

Age	**Frequency**	**Percentage**
Less than 25 years	8	16
26 – 35	13	26
36 – 45	14	28
46 – 55	10	20
56 and above	5	10
Total	**50**	**100**
Marital Status		
Single	6	12
Married	40	80
Divorced	-	-
Widow	2	4
Widower	2	4

Total	**50**	**100**
Educational Status		
N.C.E.	20	40
B.ed/ B.Sc(ed)	20	40
ND/ HND / B.Sc/ B.Tech	2	4
PGD in Education	5	10
M.ed degree	3	6
Total	**50**	**100**
Teaching Experience		
Less than 10 years	5	10
11 – 20 years	30	60
21 – 30 years	9	18
31 and above	6	12
Total	**50**	**100**
Sex		
Male	37	74
Female	13	26
Total	**50**	**100**

Source: Field Survey, 2015

Sex: Table 1 also indicated that majority (74%) of the respondents were males, while the females were only 26%. The reason for this wide gap between male and female agricultural science teachers could be because teaching agricultural science, particularly the practical aspects is labour intensive and agriculture is generally regarded as male dominated occupation. This is in line with the findings of Modebelu and Nwakpadolu (2013), who indicated that the practice of agriculture appears crude and unnecessary energy supply due to inadequate application of modern agricultural practice.

Table 2: Distribution of respondents according to most frequently used teaching method and best perceived agricultural science teaching method

Teaching	Frequency*	Percentage	Rank
Most frequently used Teaching method			
Discussion	10	20	3rd
Lecture	20	40	1st
Demonstration	13	26	2nd
Field trip	3	6	4th
Laboratory	1	2	5th
Discovery	3	6	4th
Best Perceived Teaching method			
Discussion	3	6	3rd
Lecture	4	8	2nd
Demonstration	35	70	1st
Field trip	3	6	3rd
Laboratory	2	4	4th
Discovery	3	6	3rd

Source: Field survey, 2015

*Multiple Responses

Most frequently used teaching method: The results in Table 2 showed that 20 (40%) of teachers indicated that lecture method was the most frequently used and ranked 1st. Demonstration and discussion methods ranked 2nd and 3rd respectively, while field trip and discovery method which ranked 4th accordingly were the less frequently used agricultural science teaching methods. This finding is in line with the findings of Ngesa (2006), who confirmed the findings by monitoring team that Agriculture teachers in Kenya use lecture, class discussion and group discussion methods than any other method.

Best perceived teaching method: As indicated in Table 2 demonstration method ranked 1st as best perceived teaching method, followed by field trip which ranked second, which is usually both teacher and student centred. This is in line with Fauziah and Jamaluddin (2008), who review on pedagogy and classroom practices revealed that the teacher centred and student centred teaching methods are basic to most theoretical and teaching propositions. The results in table 2 also indicated that several methods are in used for imparting agricultural science knowledge and skills, some were however perceived as better the other. This is in line with a study by Vandenbosch (2006), who found that most used strategies in teaching agriculture are, lectures, demonstrations, discussion, educational visits/field trip, projects, question and answers, assignments and practical.

Table 3: Teachers' perception on student attitude towards agricultural science practical's and their nature of involvement in the practical lessons

Students Attitude Towards Practical's	Frequency	Percentage
Very favourable	5	10
Favourable	4	8
Not favourable	41	82
Total	**50**	**100**
Nature of Involvement		
Very active	3	6
Active	2	4
Not active	45	90
Total	**50**	**100**

Source: Field Survey, 2015

The result in table 3 revealed that majority (82%) of the students have unfavourable attitude toward learning of agricultural science, particularly the practical aspect of the course, as a result students tend to memorise concept that requires analytical thinking. This is consistent with the findings of Ransford et al. (2015) who pointed out that one of the challenges of teaching and learning of agriculture was memorization of concepts that requires analytical thinking. Similarly, Table 3 also showed that large proportions (90%) of the students were not actively involved in agricultural lessons, particularly the practical aspect of the course. this is not unconnected with the drudgery associated with the practice of agriculture and the status accorded farmers by the general public. This is in line with findings of Alfred et al. (2009) who pointed out that the low status and esteem usually accorded agriculture as a profession negatively affect student attitude and nature of involvement in agricultural lessons.

ble 4: Overall agricultural science teachers' perception on the relevance of the various agricultural science teaching methods in imparting knowledge and skills

aching thods	Weighted score	Weight mean (x)	Remark
cussion	79	1.52	*
ture	78	1.59	*
monstration	192	3.84	**
ld trip	181	3.77	**
oratory	163	3.26	**
covery	170	3.62	**
al (x)		17.6	
tical Mean		2.5	= 2.5= ** < 2.5=*

urce: Field Survey, 2015
tical mean = 2.5 ** Relevant teaching method
* Not Relevant

cording Allen et al. (n.d.) instructors teaching agricultural science curricular have plemented a wide variety of teaching methods which fit different inches within the gricultural classroom. The result in Table 4 showed that teachers of agriculture perceived emonstration method as the most relevant method of imparting agricultural knowledge and ills, this is followed by field trip, discovery and laboratory methods. This implies that, though veral methods are used in imparting agricultural knowledge and skills, not all of them are levant in doing so. This is in line with the findings with the findings of Abdulhamid (2013) who ssted that the most suitable method for teaching practical oriented subject like agricultural ience is demonstration method.

Table 5: Teachers perception on the challenges to the teaching and learning of agricultural science

Statements	Teachers Weighted score	Weight (X)	Remark
1. Poor remuneration/lack of motivation makes Agricultural science unattractive	195	3.9	**
2. Background of the students negatively affect the learning of the subject	183	3.7	**
3. Large class size makes the teaching of agricultural science and practical work difficult	171	3.4	**
4. Lack of interest on the part of the teachers and students alike affect teaching and learning of the subject	191	3.8	**
5. Inadequate teaching and learning materials hinders the teaching and learning of the subject	192	3.8	**
6. Difficulties in planning and executing field trips	181	3.6	**
7. Public attitude to words agriculture negatively affect teaching and learning of the subject.	178	3.6	**
8. Climate change and its associated problems negatively affect teachers and students considering agriculture as a carrier/profession	167	3.3	**
Total (x)		**29.1**	
Critical meam			
		≥ 3.0 = **	
		< 3.0 = *	

Source: Field Survey, 2015
Critical mean = 3.0, **Serious Constraint
*Not serious constraint

ories in Table 6 revealed that all the challenges under consideration were perceived as challenges by the teachers. This implies that teaching and learning of agricultural is faced with serious challenging hampering effective teaching and learning. This is sistent with the findings of Ransford et al. (2015) that teaching of agricultural is facing problems and coupled with the fact that many university graduates in trained ialised areas of agriculture accept teaching in secondary schools as a stepping stone to a r job. Public attitude to words agriculture negatively affect teaching and learning of ultural science, and this posed a great challenge to agriculture as a profession.

clusion

ed on the findings of this study. Demonstration method was perceived as the best and more ctive method of imparting agricultural knowledge and skills. The teaching and learning of culture is also faced with serious challenges which includes among others students' kground, lack of interest on the part of the teachers and students alike and public attitude ards agriculture, particularly university graduates in trained specialised areas of agriculture usually accept teaching in secondary schools as a stepping stone to a better job.

ommendations

ed on the findings of this study the following recommendations were made

Government and other development agencies should intensify efforts in revitalizing teachers training programmes in the state, through training and re-training of agricultural science teachers.

Agricultural science teachers should be motivated by increasing their remuneration and allowances.

An enabling environment should be created for the adoption and use of modern techniques in practicing agriculture, to minimize the drudgery associated with farming and to motivate young school leavers to take agriculture as a profession.

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