

## **Agriculture Teachers' Perception of Secondary School Agriculture: A Case of Meru Central District, Kenya**

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**Abstract:** The main purpose of the study was to determine agriculture teachers' perception of secondary school agriculture. The study also determined the relationship between perception of secondary school agriculture and agriculture teachers' professional qualifications and their teaching experience. The target population for the study was all the agriculture teachers in the 60 secondary schools of Meru Central District, Kenya. Proportional stratified random sampling was used to select 20 secondary schools from provincial, district and private school categories. All the 31 agriculture teachers from the sampled schools participated in the study. The study employed an ex-post facto design in data collection. Data on perceptions was collected using self administered questionnaires. The study used descriptive statistics (means and standard deviations) and inferential statistics (chi-square test) for data analysis. Results showed that agriculture teachers perceive agriculture as a useful secondary school subject. They had a positive perception on all the 20 items regarding the usefulness of secondary school agriculture. Agriculture teachers' professional qualifications and their teaching experience had no significant relationship with their perception of secondary school agriculture. It was concluded that agriculture teachers had a positive perception of secondary school agriculture. The study recommends that the Ministry of Education should hold seminars regularly to sustain and improve the positive perception observed.

**Key words:** Perceptions • Agriculture Teachers • Secondary School Agriculture

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### **INTRODUCTION**

Agriculture is the backbone of Kenya's economy. Economic growth in Kenya is related to development within agriculture [1]. For the country to achieve agricultural growth targets, the country must increase the level of general knowledge and skills in the farming community [2]. It has been shown that secondary school agriculture broadens the farmers' capacity, makes them more effective, self-reliant, resourceful and capable of solving farming problems [3]. School agriculture is an attempt to inculcate values, attitudes and knowledge in learners needed to improve agricultural production [2]. In Kenya, agriculture was introduced in all schools in 1985 following the Mackay recommendations aimed at making the learners' self-reliant [4, 5]. Currently, in primary school curriculum, agriculture is integrated into the science curriculum [6]. In secondary schools, it is a separate subject in the school curriculum. Agriculture is an

optional subject right from form one, however, those who choose it in form one have an opportunity of dropping it in form three. In teaching this subject, secondary schools are not handling an academic subject for the purpose of offering a broadly based education. There is need for the schools to realize that they are handling a very important subject and therefore give it its due respect. This respect can partly come about if the subject is perceived positively by the agriculture teachers.

Agriculture teachers are the implementers of curriculum [6]. They can determine the success of the teaching learning process [7]. Motivation is necessary in learning. Teachers have a responsibility of motivating students to learn a subject [8, 9 and 10]. The beliefs teachers have about teaching and learning and the nature of expectations they hold for students exert a powerful influence on motivation [11]. To a large extent, students expect to learn if their teachers expect them to learn [12].

It has been noted that teaching and learning are exciting when teachers and students are highly motivated and when teachers know their subject well [13]. When teachers are motivated and enthusiastic in their teaching, students respond to their lead. Agriculture teachers can only motivate students to learn agriculture if they have a positive perception of the subject.

Agriculture is the main source of livelihood for most Kenyans, therefore teaching the subject effectively is very important. It is the responsibility of agriculture teachers to establish and maintain a positive learning environment for their teaching to be effective [10]. This responsibility can only be satisfactorily carried out if the teachers perceive the subject positively. Knowledge of the perceptions which agriculture teachers have towards agriculture, was felt could help improve on the implementation of the agriculture curriculum.

**Purpose of the Research:** The main purpose of the study was to identify perceptions of agriculture teachers regarding the usefulness of secondary school agriculture.

**The Objectives:**

**The Specific Research Objectives Were:**

- To determine how agriculture teachers perceive the usefulness of secondary school agriculture.
- To determine the relationship between perception of secondary school agriculture and agriculture teacher’s teaching experience.
- To determine the relationship between perception of secondary school agriculture and agriculture teacher’s professional qualifications.

**MATERIAL AND METHOD**

**Method:** An ex-post facto research design was adopted for the study. This design involves an experiment in which the researcher, rather than creating a treatment, examines the effects of a naturally occurring treatment after the treatment has occurred. Agriculture has been taught in Kenya’s secondary schools over the years [5, 14]. This means after the effect [15, 16 and 17]. In this study, the researcher examined the perception of agriculture teachers. There was no treatment given.

**Population and Sample Size:** The target population for the study was Meru Central District agriculture teachers. At the time of study, the district had 60 secondary schools, comprising of 12 provincial, 36 district and 12 private schools. Proportional stratified random sampling

Table 1: Distribution of Schools in the Population and the Sample

	School Category			Total
	Provincial	District	Private	
N in Population	12	36	12	60
N in Sample	4	12	4	20

procedure was used to select schools for the study. Twenty secondary schools were proportionately selected for inclusion in the study as per Table 1.

Thirty one agriculture teachers in the sampled schools participated in the study. Thirty cases is the least sample size that could be used if some form of statistical analysis is to be carried out on data obtained [18]. Stratified random sampling is necessary when the population to sample is not homogenous in terms of certain required characteristics [17, 19]. This leads to representative samples.

**Research Instrument:** Data from agriculture teachers was collected using a questionnaire. This was used to measure the agriculture teachers’ perception of secondary school agriculture. Items in the questionnaire were based on the importance of agriculture and the objectives of teaching agriculture. The measurement instrument had two sections. Section I had demographic items for the respondents. Section II had 20 statements on the usefulness of secondary school agriculture. The statements were on a five point Likert scale where: 1-Strongly Disagree, 2-Disagree, 3-Uncertain, 4-Agree and 5-Strongly Agree. Respondents were required to indicate on this scale the extent to which they agreed or disagreed with the given statements. Agricultural Education experts examined the instruments for content for content validity. Piloting of the instrument was done to examine its reliability. Data was analyzed and a Cronbach’s coefficient alpha of 0.79 was obtained. This was considered high enough for internal consistency [20, 21].

**Data Analysis:** Data was analyzed using the Statistical Package for Social Science (SPSS) version 17.0. Descriptive and inferential statistics were employed in reporting the findings. Means were used to describe the secondary school agriculture teachers’ perception of secondary school agriculture. Chi-square test was used in testing the study hypotheses. These hypotheses tested the relationship between agriculture teacher’s teaching experience, professional qualifications and their perception of secondary school agriculture. All tests of significance were performed at a level of 0.05.

**RESULTS AND DISCUSSION**

**Agriculture Teacher’s Perception of Secondary School**

**Agriculture:** Objective one of the study was designed to determine how agriculture teachers perceive the usefulness of secondary school agriculture. In order to measure perception, the respondents were asked to respond to items about secondary school agriculture. Each item in the questionnaire was rated on a five point scale (Strongly Agree-5, Agree-4, Uncertain-3 and Disagree-2, Strongly Disagree-1). This was used to calculate a mean rating score for all teachers. Therefore, the maximum mean rating score an individual respondent could have was five and a minimum of one. This mean rating score reflected the respondents’ perception. If the mean rating score was 2.5 or below, perception was termed negative and positive if it was above 2.5. The five point scale was also used to calculate the mean rating score for each item. Each item had a possible mean rating score of five and a minimum of one. The teachers’ perception scores are presented in Table 2.

Agriculture teachers had a mean rating score of 4.26. All the items were rated above 2.5, therefore the teachers had a positive perception all of items. This implies that the teachers had a positive perception of agriculture. Of the 20 items, seven were rated above

4.44. All the remaining items were rated between 3.45 and 4.44. “Agriculture should be taught to students of all academic abilities” was rated highest with a mean rating score of 4.83. The implication is that teachers are of the opinion that agriculture is not a subject for students of low academic ability only. “Products from the students’ agricultural projects lower the schools food expenses” was rated lowest with a mean rating score of 3.48. This implies that teachers understand the subject better from an academic point of view than economic. This is quite in order since they do not control the finances in school.

These results suggest that agriculture teachers perceive agriculture as a useful secondary school subject. This is what would be expected since during the course of their training, the objectives of teaching the subject are fully emphasized. Majority were of the opinion that the subject should be compulsory for all students in Form One and Two. They perceive the subject as enabling the youth to appreciate the role that agriculture plays even if they will not settle in farming. These findings concur with what several reports have emphasized [5]. All the teachers were of the opinion that agriculture in secondary school contributes to a basic understanding of agriculture which is Kenya’s most important industry. Majority agreed that agriculture should be taught to all students

Table 2: Perception Scores of Agriculture Teachers regarding the Usefulness of Secondary

School	Agriculture Statements related to secondary school agriculture	Mean	Std.Dev.
1.	Learning agriculture helps students to contribute to economic development in the community	4.77	0.270
2.	Agriculture should be taught in all education institutions	4.40	0.369
3.	Learning agriculture helps students develop a positive attitude towards farming	4.32	0.296
4.	Secondary school agriculture enables students develop skills necessary for self-reliance and self-employment	4.29	0.631
5.	Teaching agriculture in secondary schools makes the youth have positive attitude towards manual work	4.45	0.371
6.	Agriculture projects in the school promote better understanding among the learners on what has been taught in the classroom	4.74	0.240
7.	Agriculture is an important school subject	4.71	0.370
8.	Teaching agriculture in secondary schools has contributed to the society developing a positive attitude towards farming	4.83	0.462
9.	Agriculture should be taught to students of all academic abilities	4.52	0.020
10.	Teaching agriculture in secondary schools has contributed positively to improved production in agriculture	4.32	0.631
11.	Secondary school agriculture contributes to a basic understanding of agriculture, which is Kenya’s most important industry	4.65	0.444
12.	Agriculture as a secondary school subject should be examined at Form Four level	4.32	0.537
13.	Agriculture in secondary school prepares students for further studies in agriculture	4.13	0.484
14.	Learning agriculture promotes students career opportunities	3.80	0.908
15.	Teaching agriculture makes urban students aware of agriculture	3.48	1.249
16.	Products from students agricultural projects lowers the schools food expenses	4.16	0.524
17.	Participation of students in agricultural activities promotes good relations among the members of the school and the surrounding community	3.74	0.918
18.	Agriculture should be taught to all students regardless of whether they wish to join farming after leaving school	3.90	0.980
19.	Agriculture should be compulsory for all students in Form One and Two	4.00	0.036
20.	Teaching agriculture in secondary school ensures that schools take an active part in rural development	3.80	1.127

Table 3: A Contingency Table to Show the Relationship between Agriculture Teachers' Teaching Experience and their Perception of Secondary School Agriculture

Teaching experience	Perception	
	Low	High
1 - 2 years	3	4
3 - 5 years	5	6
Over 5 years	5	8

Chi-square calc. =0.135 chi-square crit. = 5.99df= 2N = 31 p<0.05

Table 4: A Contingency Table to show the Relationship between Agriculture's Professional Qualifications and their Perception of Secondary School Agriculture

Professional Qualifications	Perception	
	Low	High
Technically and Professionally trained	7	4
Technically trained	6	7
Others	2	5

Chi-square calc. =1.733Chi-square crit. =5.99df=2 N=31 p<.05

regardless of whether they wish to join farming after leaving school. The implication of these results is that agriculture teachers understand the objectives of teaching agriculture. Teachers directly interact with the students. They can have an influence on the students' perception of agriculture. Hence they can bring an attitude change to the students. If teachers have positive perception of agriculture they can encourage students to enroll in agriculture. They can also advice the school principals on the best agricultural projects to embark on.

Teachers determine how teaching proceeds. Their positive perception of the subject implies that teaching is likely to be successful. Hence the school, the individual student and the surrounding community are likely to benefit. This may also indirectly influence the parents' attitude towards the subject.

**Relationship Between Perception of Secondary School Agriculture and Teachers' Teaching Experience:**

The agriculture teachers were asked to indicate the number of years they had taught agriculture. Each individual's mean rating score on perception was categorized as being low or high depending on whether it was above or below the mean rating score for the group. A chi-square test was then used to test whether perception is independent of teaching experience. Results from analysis are shown in Table 3.

The value of chi-square obtained of 0.135 is less than the chi-square critical of 5.99 at 2 degrees of freedom as shown in table 3. This value indicated no significant relationship between agriculture teachers' teaching experience and their perception of secondary school agriculture. This therefore, led to the acceptance of the null hypothesis which stated that there is no significant relationship between agriculture teachers' teaching experience and their perception of secondary school agriculture. The implication of these results is that perception which is gained by the teachers during training is maintained throughout the course of teaching. Therefore, teachers who have worked for long may not have an advantage over those who have worked for a short period of time as far as perception is concerned.

**Relationship Between Perception of Secondary School Agriculture and Teachers' Professional Qualifications:**

The respondents were asked to state their professional qualifications. These were put into three categories.

- Technically and professionally trained: This category included teachers with Bachelor of Science degree in agricultural education and extension or a diploma in agricultural Education and Extension.
- Technically trained: This category included teachers with a certificate in agriculture, diploma in agriculture or Bachelor of Science degree in agriculture.
- Others: This category included teachers teaching agriculture but did not fall in either of the above two categories.

The individual mean score on perception was categorized as being high or low depending on whether it was below or above the mean rating score for the group. A chi-square test was then used to test whether perception is independent of professional qualifications. Results from the analysis are presented in Table 4.

The value of chi-square obtained of 1.733 is less than the chi-square critical of 5.99 at 2 degrees of freedom as shown in Table 4. This value indicated that there is no significant relationship between agriculture teacher's professional qualifications and their perception of secondary school agriculture [22-24]. This led to the acceptance of the null hypothesis which stated that there is no significant relationship between agriculture teacher's professional qualifications and their perception of secondary school agriculture. The results indicate that perception is independent of professional qualifications of the teacher.

The implication is that most of these teachers had developed a positive perception towards agriculture during their training. After being given the responsibility of teaching agriculture, teachers clearly understand the subject, hence they have a positive perception of it. Furthermore, the items in the measurement instrument were developed from objectives of teaching agriculture and the importance of agriculture.

### CONCLUSIONS

Agriculture teachers have a positive perception of secondary school agriculture. They perceive agriculture as a useful subject to the students, school and the neighbouring community. This positive perception is independent of the agriculture teachers' teaching experience and professional qualifications. The Ministry of Education should hold seminars regularly to sustain and improve the observed positive perception of the teachers regarding the usefulness of secondary school agriculture.

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