

E-ISSN: 2706-8927
P-ISSN: 2706-8919
www.allstudyjournal.com
IJAAS 2020; 2(3): 544-553
Received: 15-06-2020
Accepted: 22-08-2020

Nyamwamu Peter Obaga
Department of Agricultural
Education. Kisii University,
Kenya

Elizabeth Abenga
Department of Curriculum and
Instructional Technology,
Masinde Muliro University of
Science and Technology,
Kakamega, Kenya

Philip Oduor Owino
Department of Biological
Sciences, Kisii University,
Kenya

Assessment of professional development needs of teachers of agriculture in public secondary schools in Nyamira County

Nyamwamu Peter Obaga, Elizabeth Abenga and Philip Oduor Owino

Abstract

Low interest among teachers of Agriculture and the students might can contribute to low achievements among the Agriculture students in the Kenyan secondary schools. This study sought to identify professional development needs of teachers of Agriculture, find out content areas where teachers of Agriculture require professional development in public secondary schools in Nyamira County. A survey research design with the ex-post facto research design was used in targeting teachers of Agriculture, Principals and Quality Assurance and Standards officers in Nyamira County. The study employed 167 public secondary schools with 210 teachers of Agriculture. Random sampling was utilized to sample 50 public secondary schools for the study. Simple random sampling was used to sample teachers of Agriculture and Principals while purposive sampling was used to sample Quality Assurance and Standards Officers. Questionnaires were administered on a total of 136 teachers of Agriculture while an interview schedule was administered on 50 Principals and 5 Quality Assurance and Standards officers for collection of primary data. Data collected was subjected to both descriptive and inferential analysis and presented using frequencies, percentages and tables. The study found out that there were professional development needs for teachers of Agriculture. Most schools did not have systems or processes in place for systematic professional development of teachers of Agriculture and these schools did not facilitate implementation of the new instructional practises covered in seminars/workshops. Stakeholders should be made aware that there are professional development needs for teachers of Agriculture and these teachers should be allowed to participate and attend professional development programme.

Keywords: In-service, promotion, scholarship, needs, Nyamira

1. Introduction

Professional decision-making model shows that professional development occurs when beliefs and assumptions about the profession change, and as a result, the professional practice changes^[12]. This is related to the professional decisions taken prior to action. This model indicates the nature or essence of professional development. Another view on this point is raised by^[13], who view professional development in general terms as the development of a professional identity.

Teacher professional development has become a major part of most educational reforms around the globe. In Kenya, after decades of concentrated efforts on quantity measures such as increased access, enrolment, and extension of education, the current educational initiatives and policies are geared toward improving the quality of education through improvement of teachers' quality^[19]. Teachers are generally inadequately prepared for their teaching responsibilities in developing countries and this is true of sub-Saharan African countries^[18]. Even the best teacher training programs do not comprehensively prepare new professionals for the overwhelming responsibilities of a full-time teaching position and this appears to remain true^[2]. Inadequately trained teachers, who are not supported through professional development are likely ineffective in their teaching career. Additionally, teacher training is meant to respond to the requirements of the curriculum and media program packages that are to be implemented in schools and thus, management at training institutions should also be responsive to the demands of media program management at all levels^[1]. Research has shown that in Kenya, enrolment in Agriculture in public secondary schools in Nyamira County is low^[5]. Poor student enrolment in agriculture subject results into most students being locked out in agriculture related careers as they advance in their education.

Corresponding Author:
Nyamwamu Peter Obaga
Department of Agricultural
Education. Kisii University,
Kenya

In most developing countries like Kenya, initial teacher training is not fully sufficient and professional development programs, which are necessary in order to build on initial skills, is also poorly developed [14]. According to [1] however, despite these challenges, these developing countries are expected to offer quality education for their citizens and also meet the set Millennium Development Goals (MDGs) and also fulfill the concept of education for all. Both education for all and MDGs' initiatives continue to be important drivers of investments in human development. In particular, the education for all goals is the standard upon which most countries of the world, especially developing countries, have shaped educational provision over the last 12 years.

The global monitoring report for education for all, the year 2005 focused on quality education, defining quality as a process which includes competent teachers using active pedagogies [15]. In actual practice, this means that in some developing countries, teachers lack in-service training which should have improved their teaching competencies. In Kenya, the Ministry of Education task force report recognized the need for teachers' professional development and recommended the establishment of "a program for teacher development through regular retraining and in-servicing to improve teacher competence in curriculum delivery" [7].

The current policy on education, training and research in Kenya, for example, articulates the need to improve quality of education through continuous skills upgrading for teachers. Continuous improvement in the quality of education services should also entail continuous skills upgrading for teachers. However, this has not been the case as lack of professional development has denied most practicing teachers the chance to enhance their skills beyond those acquired during their pre-service basic training. An effective teacher, professional development program should provide for accreditation for progression both professionally and academically, while empowering teachers for their improved professional development [9].

In Kenya, there have been some efforts to provide professional development programs in the past in order to address professional development needs of teachers. These efforts included the large scale one-off projects such as the effort to Strengthening of Mathematics and Science in Secondary Education (SMASSE) project from 1998 to 2008 [17]. This professional development project and programs was based on externally driven funding, design, and implementation and was funded by the Japanese government. SMASSE specifically aimed at training mathematics and science teachers at the secondary school level. SMASSE project had a better transition because it has since been mainstreamed as a Ministry of Education program and institutionalized at the Center for Mathematics, Science and Technology Education in Africa (CEMASTEA) [6]. While institutionalization of SMASSE programs through CEMASTEA is a positive step towards sustainability, it is worrying though, that a national professional development institution has been set-up for a section of subjects of the curricula, while disregarding other subjects such as the languages and humanities.

2. Materials and Methods

2.1 Description of the study area

The study was carried out in Nyamira County. The county is

among the counties that were created out of the former Nyanza Province. It has 167 public secondary schools. The choice of the study area was due to a majority of the secondary schools, there students' academic performance and enrolment in agriculture subject over the years has remained poor, especially in the Kenya National Examinations.

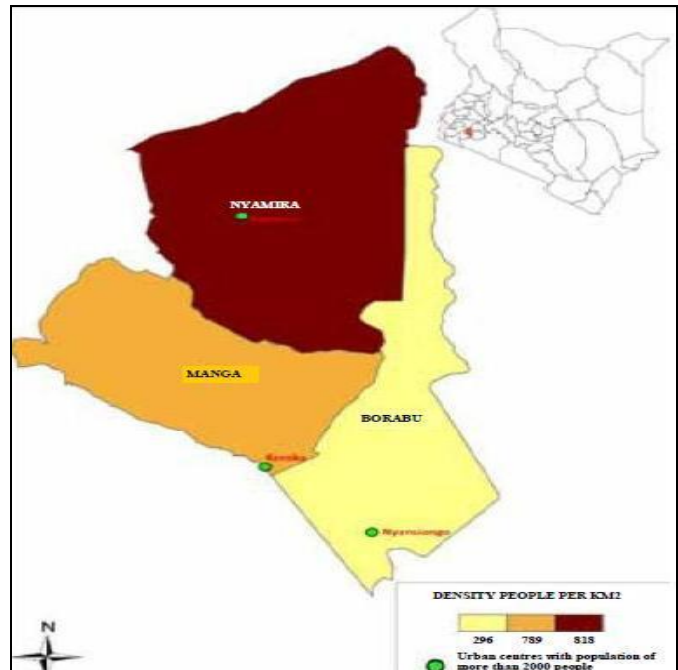


Fig 1: Map of Nyamira County; Adopted from County Commissioner office, Nyamira County.

2.2 Sample Size and Sampling Technique

2.2.1 Sample Size

The sample of the respondents for the study was determined using a formula for estimating the sample size from a given population as recommended by [3]. The formula is as follows:

$$S = \frac{X^2NP(1-P)}{d^2(N-1)} + X^2P(1-P)$$

where; S = required Sample Size

N = the given population size

P = Population proportion that for this study will be assumed to be 0.50; this is the magnitude that yields the maximum possible sample size required.

d = the degree of accuracy as reflected by the amount of error that can be tolerated in the fluctuation of a sample proportion p about the proportion P-the value of d being 0.05 in the calculations for entries in the table, a quantity equal to plus or minus 1.96σ.p

X² =table value of chi square for one degree of freedom relative to the desired level of confidence, which is 3.84 for the 0.95 confidence level represented by entries in the table.

Based on the formula shown above, the recommended sample of teachers of Agriculture based on the population size was determined as shown below;

$$S = \frac{X^2NP(1-P)}{d^2(N-1)} + X^2P(1-P)$$

$$S = \frac{3.84 \times 210(0.5)^2}{(0.05)^2} + 3.84(0.5)^2$$

$$S = 201.6 \div 1.4825$$

$$S = 135.98$$

$$S = 136$$

The sample size was determined from the infinite population of two hundred and ten teachers of Agriculture

(210) as shown so that there was a 95% level of confidence. The sample proportion P was within plus or minus 0.05 of the population value of 0.05 for P for which a minimum of hundred cases are acceptable for research. The sampling units was the teachers of Agriculture in Nyamira County. A total of 136 teachers of Agriculture was used as the sample size which is statistically justified because, according to [3], a minimum of 100 respondents should be used during a survey research. A total of 136 teachers of Agriculture, fifty (50) Principals and five (5) Quality Assurance and Standards Officers made the sample size for the study.

2.2.2 Sampling Procedure

Fifty schools constituting 30% of the 167 schools in Nyamira County were randomly sampled. According to [8], at least 10% of the target population is adequate, for social science research. From the sampled schools, simple random sampling was done to choose utmost three teachers of Agriculture per school in order to obtain a total of 136 teachers of Agriculture who participated in the study. Fifty Principals from the sampled schools were involved in the study while purposeful sampling was used to obtain the 5 Quality Assurance and Standards Officers.

2.3 Data Collection Procedures

Prior to data collection, the researcher acquired a research permit from Ministry of Education through Graduate school, Kisii University. In data collection, the researcher visited the schools, and the heads of the various schools introduced the teachers of Agriculture. The researcher then administered the questionnaires to teachers of Agriculture in the sampled schools. The interview was also be administered on the Principals and the Quality Assurance and Standards Officers for collection of primary data. Questionnaires and the interviews were administered when schools were in session and therefore the teachers of Agriculture, Principals and the Quality Assurance and Standards Officers were available for this study.

2.4 Data Analysis

The completed questionnaires were scored and values

tabulated using a Five point Likert scale of strongly agree, agree, disagree, strongly disagree and not sure and the responses of strongly agree and agree may be combined while strongly disagree and disagree also combined. The data collected was coded and analyzed using statistical package for social sciences (SPSS Version 22) and presented using simple percentages, frequencies and tables.

3. Results

3.1 Questionnaire Response Rate

The study targeted a population of 191 respondents which constituted 136 teachers of Agriculture, 50 Principals and 5 Quality Assurance and Standard officers. The study got a response of 120 teachers of Agriculture which was 88.2 percent response rate, 50 Principals which was 100 percent response rate and 5 Quality Assurance and Standards Officers who had a 100 percent response rate. According to [8], 50 percent response rate is adequate for analysis and reporting; 60 percent response rate is good and 70 percent response rate and above is remarkable, therefore the response rate of this study was outstanding for analysis and also reporting.

3.2 Demographic Information of the Respondents

The study sought to determine the demographic information of the respondents which included age, gender, teachers', principals' and education officers' academic qualification and their working experience. These data was analyzed and presented in tabular and graphical forms.

3.2.1 Gender of the Respondents

This study sought to determine the respondents' gender and their responses were recorded. Seventy three point three percent (73.3%) of the teachers of Agriculture were males while 26.7% were females. More than half, 58% of the Principals were male while 42.0% were females. Sixty percent (60%) Quality, Assurance and Standards officers were males while 40% were females. This implies that majority of teachers of Agriculture, Principals, Quality Assurance and Standards officers were males than females in the sampled schools as illustrated in Table 1.

Table 1: Gender of Respondents

Gender	Teachers of Agriculture		Principals		Quality Assurance and Standards officers	
	Freq.	Percentage (%)	Freq.	Percentage (%)	Freq.	Percentage (%)
Male	88	73.3	29	58	3	60
Female	32	26.7	21	42	2	40
Totals	120	100	50	100	5	100

3.2.2 Age of the Respondents

Majority of the teachers of Agriculture, 57.5% were of age between 31-40 years and followed by 18.3% who were aged between 26-30 years. Fifteen point eight percent (15.8%) of the teachers of Agriculture were of age between 41-50 years old while 8.3% were above 51 years old. Sixty six percent (66.0%) of the Principals were above 50 years old while 34% were of age between 41-50 years old. Majority, 60% of

the Quality, Standards and Assurance Officers were of age between 41-50 years while 40% were between 46-50 years old. This implies that most of the respondents were of the age bracket that enabled them to undertake tasks and possessed more physical vigor and could shoulder more work-related tasks than the older ones in both the teaching and management force as shown in Table 2.

Table 2: Age of the Respondents

Age (years)	Teachers of Agriculture		Principals		Quality Assurance and Standards officers	
	Freq.	Percentage (%)	Freq.	Percentage (%)	Freq.	Percentage (%)
<25	-	-	-	-	-	-
26-30	22	18.3	-	-	-	-
31-40	69	57.5	-	-	-	-

41-50	19	15.8	17	34	3	60
Above 51	10	8.3	33	66	2	40
Totals	120	100	50	100	5	100

3.2.3 Academic Qualification of the Respondents

Majority, 53.3% of the teachers of Agriculture had Bachelor’s degree as their academic qualification, 31.7% with Diploma, 13.3% with Masters and only 6 (5.0%) had PhD academic qualification. Fifty six percent (56.0%) of the Principals had Bachelor’s degree, 16.0% had Master’s degree, 8.0% had PhD while 20% had Diploma as their academic qualification. Sixty percent (60%) of the Quality

Assurance and Standard officers had Master’s degree while 40% had PhD academic qualification as illustrated in Table 3. This implies that majority of the teachers of Agriculture and the management of the institutions had minimum threshold to teach and manage the institutions. The academic qualification has a bearing in the inspiration and professional development of teachers of Agriculture.

Table 3: Academic Qualification of the Respondents

Academic Qualification	Teachers of Agriculture		Principals		Quality Assurance and Standards officers	
	Freq.	Percentage (%)	Freq.	Percentage (%)	Freq.	Percentage (%)
Diploma	38	31.7	10	20	-	-
Bachelor’s Degree	64	53.3	28	56	-	-
Master’s Degree	16	13.3	8	16	3	6.0
PhD	6	5.0	4	8	2	4.0
Totals	120	100	50	100	5	100

3.2.4 Working Experience of the Respondents

Forty percent (40.0%) of teachers of Agriculture had a teaching experience between 5-7 years followed by twenty eight percent (28.3%) of the teachers of Agriculture had a teaching experience of 2-4 years while 15.8% had less than 1 and above 8 teaching experience respectively. Majority, 44.0% of the Principals had a working experience of between 5-7 years while 28.0%, 10.0% and 18.0% had 2-4, less than 1 and above 8 working experience respectively. Eighty (80%) Quality Assurance and Standards officers had working experience of 5-7 years while only 20% had a working experience of above 8 years. This implies that most

teachers of Agriculture, Principals and Quality Assurance and Standards officers had a working experience of more than one year and hence were in the position to respond to the questionnaires and interview items concerning the professional development needs for teachers of Agriculture in public secondary schools in Nyamira County. This further implies that most the teachers of Agriculture, Principals and Quality Assurance and Standards officers were senior officers who had enough experience. These findings indicate that all of them were better placed to give relevant and reliable responses about teaching of Agriculture as illustrated in Table 4.

Table 4: Working experience of the Respondents

Working experience (yrs.)	Teachers of Agriculture		Principals		Quality Assurance and Standards officers	
	Freq.	Percentage (%)	Freq.	Percentage (%)	Freq.	Percentage (%)
Less than 1	19	15.8	5	10.0	-	-
2-4	34	28.3	14	28	-	-
5-7	48	40.0	22	44	4	80
Above 8	19	15.8	9	18	1	20
Totals	120	100	50	100	5	100

3.3 Response on Professional Development Needs

The study sought to establish the professional development needs of teachers of Agriculture. The respondents were requested to indicate the extent to which they agreed or disagreed with the statements provided.

3.3.1 Teachers of Agriculture’s Response on Professional Development Needs

The study sought to establish professional development needs among teachers of Agriculture. The data reveals that 14.7% of the teachers of Agriculture strongly agreed that teachers of Agriculture have professional development needs while 16.7% of them agreed. However, 27.5%, 31.7% and 10.0% of the teachers of Agriculture indicated that they disagreed, strongly disagreed and were not sure respectively. Majority of the

Principals (30%) indicated that they strongly disagreed that teachers of Agriculture have professional development needs. Eighteen percent, 26.0%, 22.0% and 4.0% indicated that they strongly agreed, agreed disagreed and were not sure that teachers of Agriculture have professional development needs respectively. Only 40.0% of the Quality Assurance and Standards officers disagreed that teachers of Agriculture have professional development needs while for those who strongly agreed, agreed and strongly disagreed were 20% respectively as shown in Table 5. This implies teachers of Agriculture had professional development needs which needed to be met. Therefore, it is important for the stakeholders to plan on how the teachers of Agriculture should meet their professional development needs. There was a statistical significance ($p < 0.05$) on professional development needs of teachers of Agriculture.

Table 5: Responses on Professional Development Needs

Statement: Teachers of Agriculture have professional development needs												
Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Teachers of Agriculture	17	14.7	20	16.7	33	27.5	38	31.7	12	10	120	100
Principals	9	18	13	26	11	22	15	30	2	4	50	100
Quality Assurance and Standards officers	1	20	1	20	2	40	1	20	-	-	5	100

3.3.2 Participation of Teachers of Agriculture in Professional Development Programs

The study sought to establish participation of teachers of Agriculture in professional development programs. The data indicated that 40.8% of the teachers of Agriculture never participated in professional development programs and were closely followed by 26.7% of them indicated that they rarely participated. However, 4.2%, 7.5% and 20.8% of the teachers of Agriculture indicated that they always, often and occasionally participated in professional development programs respectively. Fourteen percent (14.0%) of the principals indicated that teachers of Agriculture always participated in professional development programs while 8.3%, 12.5%, 10.0% and 12.0% indicated that teachers of

Agriculture often, occasionally, rarely and never participated in professional development programs respectively. Only 20.0% of the Quality Assurance and Standards officers indicated that teachers of Agriculture often participated in professional development programs while for those who indicated that teachers of Agriculture occasionally and rarely participated in professional development programs each were 40% respectively as illustrated in Table 6. This study findings implies that majority of the teachers of Agriculture had not participated in professional development programs. There was a statistical significance ($p < 0.05$) on participation of teachers of Agriculture in professional development programs.

Table 6: Participation of teachers of Agriculture in professional development programs

Statement: Participation of teachers of Agriculture in professional development programs												
Respondents	Always		Often		Occ.		Rarely		Never		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Teachers of Agriculture	5	4.2	9	7.5	25	20.8	32	26.7	49	40.8	120	100
Principals	7	14.0	10	8.3	15	12.5	12	10.0	6	12.0	50	100
Quality Assurance and standards officers	-	-	1	20	2	40	2	40	-	-	5	100

3.3.3 Professional Development Programmes attended by teachers of Agriculture on their Performance

The study also sought to establish whether professional development programmes attended by teachers of Agriculture had an impact on their performance in their subject area. The findings are presented as follows;

3.3.1.1 Teachers of Agriculture's responses on Professional Development Programmes attended had an impact on their Performance

The data revealed that 81.6% of the teachers of Agriculture strongly agreed that professional development programs they attended had an impact on their performance in their subject area while only 22 18.3% also agreed to the same statement. The statement that Professional development programmes have a role to play in influencing teachers of

Agriculture performance in their schools, majority of them 55.8% strongly agreed to the statement, 29.2% agreed while 15.0% were not sure of the statement. However, 5.0%, 55.8%, 32.5% and 6.7% of the teachers of Agriculture indicated that they agreed, disagreed, strongly disagreed and were not sure to the statement that there is a system or process in place for systematic professional development of teachers of Agriculture respectively. These findings implies that majority of the teachers of Agriculture agreed that professional development programmes attended by teachers of Agriculture had an impact on their performance in their subject area as illustrated in Table 7. There was a statistical significance ($p < 0.05$) on teachers of Agriculture's responses on whether professional development programmes attended had an impact on their Performance.

Table 7: Teachers of Agriculture's Response on whether Professional Development Programs they attended had an impact on their Performance in their subject area

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Professional development program teachers of Agriculture attended had an impact on their performance in their subject area	98	81.6	22	18.3	-	-	-	-	-	-	120	100
Professional development programmes have a role to play in influencing performance in your school	67	55.8	35	29.2	-	-	-	-	18	15.0	120	100
There is a system or process in place for systematic professional development of teachers of agriculture	-	-	6	5.0	67	55.8	39	32.5	8	6.7	120	100

3.3.1.2 Principals’ Responses on whether Professional Development Programmes attended by Teachers of Agriculture had an impact on their Performance

The study also sought to establish from the principals whether professional development programmes attended by teachers of Agriculture had an impact on their performance in their subject area. It was found that more than half, 62.0% of the principals strongly agreed that professional development programs attended by teachers of Agriculture had an impact on their performance in their subject area while only 34.0% of them agreed to the same statement. The statement that Professional development programmes have a role to play in influencing teacher of Agriculture performance in their schools, a high number of them 74.0%

strongly agreed to the statement while only 26.0% agreed to the statement. Nevertheless, 42.0% of the principals disagreed to the statement that there is a system or process in place for systematic professional development of teachers of agriculture, 32.0% strongly disagreed, 16.0% agreed while only 10.0% strongly agreed to the same statement as shown in Table 8. These findings implies that majority of the Principals agreed that professional development programmes attended by teachers of Agriculture had an impact on their performance in their subject area. There was a statistical significance ($p < 0.05$) on Principals’ responses on whether professional development programmes attended had an impact on their Performance in their subject area.

Table 8: Principals' Responses on whether Professional Development programmes attended by Teachers of Agriculture had an impact on their Performance in their subject area

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
The professional development program teachers of Agriculture attended had an impact on their performance in their subject area	31	62.0	17	34.0	-	-	-	-	2	4.0	50	100
Professional development programs have a role to play in influencing performance in your school	37	74.0	13	26.0	-	-	-	-	-	-	50	100
There is a system or process in place for systematic professional development of teachers of agriculture	5	10.0	8	16.0	21	42.0	16	32.0	-	-	50	100

3.3.1.3 Quality Assurance and Standard Officers' Responses on Professional Development Programmes attended by Teachers of Agriculture had an impact on their Performance

In trying to establish from the Quality Assurance and Standard officers’ on whether professional development programmes attended by teachers of Agriculture had an impact on their performance in their subject area, it was revealed that more only 20.0% of the Quality Assurance and Standards officers were not sure to the statement while who strongly agreed and agreed were 40.0% respectively. The statement that professional development programmes have a role to play in influencing teacher of Agriculture performance in their schools, majority of them 60.0%

agreed to the statement while 26.0% strongly agreed to the statement. On the other hand, 20.0% of the Quality Assurance and Standard officers were not sure to the statement that there is a system or process in place for systematic professional development of teachers of Agriculture while in each case, 40.0% strongly agreed and agreed to the same statement as shown in Table 9. This implies that professional development programmes attended by Teachers of Agriculture had an impact on their performance in their subject area. There was a statistical significance ($p < 0.05$) on Quality Assurance and Standards officers’ responses on whether professional development programmes attended had an impact on their Performance in their subject area.

Table 9: Quality Assurance and Standards officers' Responses on whether Professional Development Programmes teachers of Agriculture attended had an impact on their Performance in their subject area

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
The professional development program teachers of Agriculture attended had an impact on their performance in their subject area	2	40	2	40	-	-	-	-	1	20	5	100
Professional development programs have a role to play in influencing performance in your county	2	40	3	60	-	-	-	-	-	-	5	100
There is a system or process in place for systematic professional development of teachers of agriculture	2	40	2	40	-	-	-	-	1	20	5	100

3.3.1.4 Responses on Teachers of Agriculture Workshop/Seminar Attendance

The study also sought to find out from the respondents on the extent of attending seminars/ workshops by teachers of Agriculture. The study established that among the teachers of Agriculture, 4.2% of them often attended seminars and workshops 22.5% occasionally attended seminars/ workshops, majority of them, 45.8% indicated that they rarely attended while 26.7% also indicated that they never attended seminars and workshops. For the Principals, more than half, 52.0% of then indicated that teachers of

Agriculture rarely attend seminars and workshops while 18.0%, 24.0% and 6.0% indicated that teachers of Agriculture often, occasionally and never attend seminars and workshops respectively. Sixty percent (60.0%) of the Quality Assurance and Standards officers indicated that teachers of Agriculture rarely attend workshops and seminars while for those who indicated that teachers of Agriculture occasionally and never attended workshops were 20.0% in each case as shown in Table 10. These findings implies that teachers of Agriculture do not adequately attend seminars and workshops as part of their

professional development needs. There was a statistical significance ($p < 0.05$) on teachers of Agriculture's

responses on seminar/Workshop attendance.

Table 10: Teachers of Agriculture Workshop/Seminar Attendance

Statement: Extent of attending seminars/ workshops by teachers of Agriculture												
Respondents	Always		Often		Occ.		Rarely		Never		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Teachers of Agriculture	-	-	5	4.2	27	22.5	56	45.8	32	26.7	120	100
Principals	-	-	9	18.0	12	24	26	52	3	6.0	50	100
Quality, assurance and standards officers	-	-	-	-	1	20	3	60	1	20	5	100

3.3.1.5 Responses on Attending In-service Training by Teachers of Agriculture

The study sought to find out the extent of attending in-service training by teachers of Agriculture. Majority of the teachers of Agriculture, 51.7% indicated that they rarely attended in-service training, 19.2% never attended seminars/workshops while 11.7% and 17.5% indicated that they often and occasionally attended in-service training respectively. For the Principals, 48.0%, 28.0% and 24.0% indicated that teachers of Agriculture occasionally, rarely and never attended in-service training respectively. Eighty percent

(80.0%) of the Quality Assurance and Standards officers indicated that teachers of Agriculture rarely attend in-service training while for those who indicated that teachers of Agriculture never attended in-service training was 20.0% as shown in Table 11. These findings imply that in-service training by teachers of Agriculture is important in their teaching profession. Therefore, they should be given a chance to attend in order to refresh their content delivery skills. However, there was no statistical significance ($p > 0.05$) on extent of attendance of In-service training by teachers of Agriculture.

Table 11: Extent of Attending In-service Training by teachers of Agriculture

Statement: Extent of attending in-service training by teachers of Agriculture												
Respondents	Always		Often		Occ.		Rarely		Never		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Teachers of Agriculture	-	-	14	11.7	21	17.5	62	51.7	23	19.2	120	100
Principals	-	-	-	-	14	28.0	24	48	12	24	50	100
Quality, Assurance and Standards officers	-	-	-	-	4	80.0	1	20.0	-	-	5	100

3.3.1.6 School Implementation of the New Instructional Practices covered in the Seminar/ Workshop

Majority of the teachers of Agriculture, 55.8% indicated that their schools rarely facilitated implementation of the new instructional practices covered in the seminars/ workshops while 19.2% and 25.0% indicated that their schools occasionally and never facilitated implementation of the new instructional practices covered in the seminar/workshop respectively. More than half, 60.0% of the Principals indicated that their schools occasionally and never facilitated implementation of the new instructional practices covered in the seminar/workshop while 26.0% and 6.0% indicated that their schools rarely facilitated implementation of the new instructional practices covered in the seminars/workshops. Sixty percent (60.0%) of the Quality Assurance and Standards officers indicated that

schools in their county facilitated implementation of the new instructional practices covered in the seminars/workshops while only 40.0% also indicated that schools in their county facilitated implementation of the new instructional practices covered in the seminars/workshops as illustrated in Table 12. The study findings imply that schools do not facilitate implementation of new instructional practises teachers of Agriculture cover in workshops/seminars. This will further make teachers of Agriculture lose interest in attending such seminars/workshops in case they are organized. There was statistical significance ($p < 0.05$) on responses on the extent to which the school facilitates implementation of new Instructional practises covered in the seminars or workshops.

Table 12: Responses on the Extent to which the School Facilitates Implementation of New Instructional Practises covered in the Seminars or Workshops

Statement: Extent to which the school facilitates implementation of the new instructional practices covered in the seminar/workshop												
Respondents	Always		Often		Occ.		Rarely		Never		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Teachers of Agriculture	-	-	-	-	23	19.2	67	55.8	30	25.0	120	100
Principals	-	-	4	8.0	13	26.0	30	60.0	3	6.0	50	100
Quality, assurance and standards officers	-	-	-	-	3	60	2	40	-	-	5	100

3.3.1.7 Extent to which Motivation Satisfies Teachers of Agriculture

The study sought to establish the responses on the extent to which motivation satisfies of teachers of Agriculture. The respondents were requested to indicate the extent to which they agreed or disagreed with the statements provided.

3.3.1.7.1 Teachers of Agriculture's Responses on their Motivation

The study sought to determine the extent to which motivation satisfied teachers of Agriculture. Forty five percent (45%) of the teachers of Agriculture agreed that promotions offered to teachers of Agriculture satisfied them

while 39.2%, 5.8% and 10.0% strongly agreed, disagreed and strongly disagreed to the same statement respectively. More than half, 53.3% of the teachers of Agriculture indicated that they strongly agreed that they were satisfied with in-service training they attended while 24.2%, 15.8% and 6.7% indicated that they agreed, disagreed and strongly disagreed that in-service training they attended satisfied them. Majority, 52.5% of them agreed that they are satisfied with scholarships offered to them while 30.8% strongly agreed, 7.5% disagreed and only 9.2% strongly disagreed to the same statement. The statement that teachers of Agriculture are satisfied with seminars/ workshops they attended, 36.7% strongly agreed, 25.8% agreed, 17.5% disagreed while 20.0% strongly disagreed to the same statement. Majority of the teachers of Agriculture, 45.0%

strongly agreed that teachers of Agriculture were satisfied with rewards offered to them due to their performance while 30.0% agreed, 14.2% disagreed and 10.8% strongly disagreed with the same statement. The statement that job mobility in their teaching career, majority of the teachers of Agriculture 59.2% agreed to the statement while 40.8% strongly agreed with the statement as shown in Table 13. This implies that motivation is important to teachers of Agriculture. Motivational strategies such as rewards, promotions, job mobility or scholarships should be embraced by stakeholders as they increase teacher morale and satisfaction in teaching. There was statistical significance ($p < 0.05$) on teachers of Agriculture's responses on the extent to which they are satisfied with motivation.

Table 13: Teachers of Agriculture's Responses on Motivation

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Promotions offered to me	47	39.2	54	45.0	7	5.8	12	10.0	-	-	120	100
In-service training I attend	64	53.3	29	24.2	19	15.8	8	6.7	-	-	120	100
Scholarships offered to me	37	30.8	63	52.5	9	7.5	11	9.2	-	-	120	100
Seminar/ workshops I attend	44	36.7	31	25.8	21	17.5	24	20.0	-	-	120	100
Rewards offered to me due to performance	54	45.0	36	30.0	17	14.2	13	10.8	-	-	120	100
Job mobility in my teaching career	49	40.8	71	59.2	-	-	-	-	-	-	120	100

3.3.1.7.2 Principals' Responses on Motivation of Teachers of Agriculture

The study sought to establish the extent to which motivation satisfied teachers of Agriculture. Forty four percent (44.0%) of the Principals strongly agreed that promotions offered to teachers of Agriculture satisfied them while 36.0%, 6.0% and 14.0% agreed, disagreed and strongly disagreed to the same statement respectively. Twenty six percent (26.0%) of the Principals indicated that they strongly agreed that teachers of Agriculture were satisfied with in-service training they attended while 38.0%, 14.0% and 22.0% indicated that they agreed, disagreed and strongly disagreed that in-service training teachers of Agriculture attended satisfied them. Twenty eight percent (28.0%) of the Principals strongly agreed that teachers of Agriculture are satisfied with scholarships offered to them while 42.0% agreed, 10.0% disagreed, 18.0% strongly disagreed and only

2.0% were not sure to the same statement. The statement that teachers of Agriculture are satisfied with seminars/ workshops they attended, 48.0% of the Principals strongly agreed, 30.0% agreed, 12.0% disagreed while 10.0% strongly disagreed to the same statement. Majority of the Principals, 56.0% agreed that teachers of Agriculture are satisfied with rewards offered to them due to their performance while 44.0% agreed with the same statement. The statement that job mobility in their teaching career, majority of the Principals 54.0% strongly agreed to the statement while 46.0% agreed with the statement. The study findings implies that motivation is significant to teachers of Agriculture as shown in Table 14. There was statistical significance ($p < 0.05$) on Principals' responses on the extent to which teachers of Agriculture are satisfied with motivation.

Table 14: Principals' Responses on the Extent to which Motivation satisfies teachers of Agriculture

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Promotions offered to teachers of Agriculture	22	44.0	18	36.0	3	6.0	7	14.0	-	-	50	100
In-service training teachers of Agriculture attend	13	26.0	19	38.0	7	14.0	11	22.0	-	-	50	100
Scholarships offered to teachers of Agriculture	14	28.0	21	42.0	5	10.0	9	18.0	1	2.0	50	100
Seminar/ workshops teachers of Agriculture attend	24	48.0	15	30.0	6	12.0	5	10.0	-	-	50	100
Rewards offered to teachers of Agriculture due to performance	22	44.0	28	56.0	-	-	-	-	-	-	50	100
Job mobility in teachers of Agriculture's teaching career	27	54.0	23	46.0	-	-	-	-	-	-	50	100

3.3.1.7.3 Quality Assurance and Standards officers' Responses on Motivation of Teachers of Agriculture

The study sought to find out the extent to which motivation satisfied teachers of Agriculture. Sixty percent (60.0%) of the Quality Assurance and Standards officers strongly agreed that promotions offered to teachers of Agriculture satisfied them while 40.0% agreed to the same statement. Eighty percent (80.0%) of the Quality Assurance and Standards officers indicated that they strongly agreed that teachers of Agriculture were satisfied with in-service

training they attended while only 20.0% of them indicated that they agreed that in-service training teachers of Agriculture attended satisfied them. Majority, 60.0% of the Quality Assurance and Standards officers strongly agreed that teachers of Agriculture are satisfied with scholarships offered to them while 40.0% agreed to the same statement. The statement that teachers of Agriculture are satisfied with seminars/ workshops they attended, 80.0% of the Quality Assurance and Standards officers strongly agreed while 20.0% agreed to the same statement. Majority of the Quality

Assurance and Standards officers, 80.0% strongly agreed that teachers of Agriculture are satisfied with rewards offered to them due to their performance while 20.0% agreed with the same statement. The statement that job mobility in their teaching career, 100% of the Quality Assurance and Standards officers strongly agreed to the

statement. The findings implies that teachers of Agriculture need motivation as part of their professional development need as shown in Table 15. There was statistical significance ($p < 0.05$) on Quality Assurance and Standards officers' responses on the extent to which teachers of Agriculture are satisfied with motivation.

Table 15: Quality Assurance and Standards officers' views on Motivation of teachers of Agriculture

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Totals	
	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc	Freq	Perc
Promotions offered to teachers of Agriculture	3	60.0	2	40.0	-	-	-	-	-	-	5	100
In-service training teachers of Agriculture attend	4	80.0	1	20.0	-	-	-	-	-	-	5	100
Scholarships offered to teachers of Agriculture	1	20.0	3	60.0	-	-	-	-	1	20.0	5	100
Seminar/ workshops teachers of Agriculture attend	4	80.0	1	20.0	-	-	-	-	-	-	5	100
Rewards offered to teachers of Agriculture due to performance	4	80.0	1	20.0	-	-	-	-	-	-	5	100
Job mobility in teachers of Agriculture's teaching career	5	100	-	-	-	-	-	-	-	-	5	100

4. Discussion, conclusion and recommendations

4.1 Professional Development Needs of teachers of Agriculture in public secondary schools in Nyamira County

The study established that teachers of Agriculture had professional development needs which required to be addressed. These results are in line with those of [10, 11] who emphasized that teacher professional needs such as in-service training should be designed and offered to teachers in order to add on the knowledge and skills already possessed by a serving teacher. It through meeting teachers of Agriculture professional needs that can enhance efficient content delivery to the learners. It was found that schools rarely facilitated implementation of the new instructional practices covered in the seminar/ workshops. Job mobility in teachers of Agriculture's career was found to be satisfying the teachers of Agriculture. These findings are in tandem with those obtained by [4] that unfair promotions, few promotional opportunities, and promotion criteria results in demoralization, low motivation and brain drain among employees.

5. Conclusion

There were professional development needs for teachers of Agriculture and these teachers should be allowed to participate in those professional development programmes such as attending in-service programmes, workshop and seminars and also get motivated through offering them scholarships, promotions, rewards on performance and regular job mobility in their teaching careers. Teachers of Agriculture were not allowed to attend professional development programmes though they impact on their performance in their subject area.

Most schools did not have systems or processes in place for systematic professional development of teachers of Agriculture and did not facilitate implementation of the new instructional practises covered in seminars/ workshops. There were content and competence areas that teachers of Agriculture needed professional development.

6. Recommendations

In order to improve on the professional development of teachers of Agriculture in secondary schools in Nyamira County, the following recommendations were made;

1. Stakeholders should be made aware that there are professional development needs for teachers of Agriculture and these teachers should be allowed to

participate and attend professional development programmes.

2. All public secondary schools should ensure that there are systems or processes in place for systematic professional development of teachers of Agriculture and also facilitate implementation of the new instructional practises covered in seminars/ workshops.

7. Conflict of Interest

"The author(s) declare(s) that there is no conflict of interest." There was no role of the funding sponsors in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

8. Acknowledgement

The author would like to acknowledge the input, support and guidance accorded by the study supervisors, the department of Agricultural Education, Kisii University, all the teachers of Agriculture and Principals of the sampled schools and Quality Assurance and Standard Officers of Nyamira County.

9. References

1. Abenga SBE. Reflections on Quality Assurance in Teacher Education in Kenya. In: The Cradle of Knowledge African Journal of Educational and Social Research 2017 pages 130-146. Published by Society of Educational Research and Evaluation in Kenya (SEREK), 2017, 5(2).
2. Davis B, Bloom G. Support for New Teachers. Trust for Educational Leadership. 2008; 28(2):16-18.
3. Kathuri NJ, Pals DA. Introduction to educational research, Egerton University, Njoro: Education Materials Centre, 1993.
4. Kipkebut DJ. Organizational Commitment and Job Satisfaction in Higher Educational Institutions: The Kenyan Case (PhD Thesis). Middlesex University. London: Middlesex Univeristy, 2010.
5. Kenya National Examination Council. Nyamira County KCSE Examination Analysis; Nairobi Kenya; the Kenya National Examination Council, 2016.
6. Ministry of Education. Sessional Paper No.1 of 2005 on a Policy Framework for Education, Training and Research. Nairobi; Government Printer, 2009.
7. Ministry of Education. Report of the task force on the re-alignment of education sector to the constitution of

- Kenya, 2010. Towards a globally competitive quality education for sustainable development. Retrieved from www.education.go.ke/Documents.aspx?docID=, 2012; 2047.
8. Mugenda OM, Mugenda AG. *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts Press, 1999.
 9. Muindi B. TSC bosses locked in promotion row. *Daily Nation*, 2009, 64.
 10. Ndem JU. Mechanisms for Enhancing Teacher's Effectiveness in the Implementation of Agricultural Science Programme in Secondary Schools in Afikpo Education Zone of Ebonyi State. *Journal of Education and practice*. 2016; 7(4):6-16.
 11. Okojie MU. Teacher Education: Challenges for the 21st Century. *Multidisciplinary Journal of research development*. 2009; 13(1):93-100.
 12. Smith K. Professional Development of Teachers. In: Peterson P, Baker E and McGaw B (eds) *International Encyclopedia of Education (Third Edition)*. Oxford: Elsevier, 2017, 681-688.
 13. Swennen A, Volman M, Van Essen M. The development of the professional identity of two teacher educators in the context of Dutch teacher education. *European Journal of Teacher Education*. 2014; 31:169-184.
 14. UNESCO Bankok Office. *Keys to effective training programmes*. Retrieved from <http://www.unescobkk.org/education/ict/themes/training-of-teachers/guidelines/keys-to-effective-training>, 2010.
 15. UNESCO. *World data on education: Kenya (7 ed.): UNESCO-KBE*, 2015.
 16. Vandenbosch T. *Post-Education & Training in sub-Saharan Africa; Principal Research work commissioned by the World Bank on Agricultural Education and Training in Sub-Saharan Africa*. Nairobi: World Agro forestry Centre (ICRAF), 2012.
 17. Waititu MM, Orado GN. *Managing teachers and the instruction of mathematics and science: Lessons from the SMASSE experience in capacity development*. Retrieved from <http://info.worldbank.org/etools/docs/library/245737/day8%20b.%20PAPER%20Lessons%20from%20MASSE%20OradoMaichael.pdf>, 2009.
 18. Wanzare ZO. The transition period: The early years of being a teacher. In T. Townsend & R. Bates (Eds.). *Handbook of Teacher Education*, 343–364. Retrieved from <http://www.springerlink.com/content/m4164477704u91t2/fulltext.pdf>, 2017.
 19. World Bank. *From pre-service training to retirement: Producing and maintaining a high quality, efficient, and motivated workforce*. Jakarta: World Bank, 2015.