Level of Access to the School Farm and the Acquisition of Agricultural Skills among Secondary School Students in Malava Sub-County, Kakamega County, Kenya

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Abstract

One of the objectives of teaching Agriculture at the secondary school level is to equip learners with practical agricultural skills as this is considered one of the ultimate panacea to addressing unemployment and food insecurity. The school farm is considered a necessity in the teaching and learning of Agriculture for acquisition of practical skills. This study aimed at establishing the relationship between access to the school farm and the level of acquisition of agricultural skills among secondary school students. Correlational research design was adopted. The study targeted 1532 secondary school teachers and 4327 form three students in Malava Sub-County. The accessible population comprised of the 171 teachers of Agriculture and 2532 form three Agriculture students. Based on Nassiuma formula, 15 schools were sampled. Based on the Yamane formula, 150 form three students of Agriculture were sampled. One Agriculture teacher was selected from each of the sampled school. Questionnaires and an observation guide were used to gather data. A pilot study was carried out in Khwisero Sub-County to determine the instruments' reliability where Cronbach's alpha of 0.89 and 0.72 was obtained for the agriculture teachers and students' questionnaires respectively. Reliability of the observation guide was determined qualitatively by discussing the items with the supervisors. Chi-square test of relationship was used to analyse the findings of this study aided by the Statistical Package for Social Sciences (SPSS) version 26. The study established that level of access to the school farm had a significant relationship to the level of agricultural skill acquisition among the students. Based on the findings, the study recommended that to enhance level of access to the school farm especially during lesson time, more time needs to be allocated to Agriculture on the timetable by the Ministry of Education.

Keywords: Level of Access, Agricultural Skills, The School Farm, Secondary Schools.

Background to the Study

Agricultural education is a type of vocational training that equips learners with the knowledge and skills in productive agriculture; the training of both the head and the hands of the learners (Haruna, Asogwa & Ezhim, 2019). In contrast to general education, Cheruiyot (2018) reiterated that agricultural education is skill oriented as it involves a lot of outdoor activities that are crucial in equipping learners with practical skills. Agricultural education tends to foster technological advancement and enhances economic development as Cannon (2019) reiterates thus very pivotal in economic development of a nation. According to Karani, Mugambi and Waiganjo (2024), agricultural education touches on food security and poverty alleviation thus worth being emphasized especially among the developing countries where food insecurity and austerity are a common phenomenon. At the secondary school level, Agriculture is a pre-vocational subject since the skills acquired at this level can place a learner in a better position to pursue a career in the agricultural sector. Haruna et al (2019) argued that through Agricultural Education and Training programmes, individuals are empowered to be successful in real life situation upon graduation.

Secondary school level produces the largest number of agriculture graduates of whom few proceed to the higher learning institutions (Kyule & Konyango, 2019). Majority of the agriculture graduates exiting secondary schools need to be prepared for work and the existing opportunities in the agriculture sector. Manyasi (2019) urges that the knowledge and skills acquired from learning Agriculture at the secondary school level greatly contributes to improved agricultural productivity among farmers. Kyule, Konyango and Nkurumwa (2015) established that 92.7 percent of farmers who had studied Agriculture at the secondary school level performed better in indigenous poultry farming in comparison to their counterparts who had not studied the subject at the secondary school level. Owing to the vocational nature of Agriculture, the process of skill acquisition entirely depends on the use of an array of facilities and resources. Cheruiyot (2018) affirms that the practical implementation of topics in the Agriculture syllabus such as crop production, livestock production, farm tools and equipment and many others demands the incorporation of various facilities and resources. The paradigm shift to learner-centred approach further necessitates resource use during the instructional process as Deegan, Wims and Petit (2016), associate their use to learner freedom which nurtures inquisitiveness and problem solving which are ingredients of skill acquisition.

Educational facilities according to Edokpolor and Dumbiri (2019) are the tangible assets that can easily be seen and observed in learning institutions where they contribute directly or indirectly to the teaching and learning processes by providing a conducive environment. The school farm is arguably one of the most relevant facilities in agricultural education. Machisu, Opondo, Nakhumicha and Mosi (2022) affirm that school farms provide a laboratory that enhances the quality of secondary school agricultural education. In the developed world, the concept of school agricultural farming began in the early 19th century. Christie (2016) points out that during this period, school farms were established across the United States of America, Australia and Europe with a goal of improving the quality of education through actively involving children in the learning process. Pascoe and Wyatt-Smith (2013) pointed out that in Australian schools, there are many different types of school gardens in practice which include; indigenous gardens, kitchen gardens, garden clubs, and permaculture gardens which cover a wide array of aspects of the school curriculum.

Teaching and learning of Agriculture in Kenyan secondary schools serves two fundamental objectives. First, the learners should develop basic principles of agricultural production relevant to Kenya in general

and specifically to their own environments. Secondly, learners should be engaged in practical agricultural activities which aim at assisting them to acquire useful agricultural skills (KIE, 2006). For these objectives to be achieved, students should be involved in hands-on activities during Agriculture lessons. The school farm facility is used as a laboratory where Agriculture students can carry out their projects. With laboratory experience, the students will have an opportunity to translate what they have learned in the classroom to practical realities thus enhancing their acquisition of practical agricultural skills (Onwumere, Modebelu & Chukwuka , 2016).

Over the years, the number of students enrolling for Agriculture has tremendously increased. Even after being made optional following the 2002 educational reforms, reports from the Kenya National Examination Council (KNEC, 2019) revealed that Agriculture still remains the most popular optional subject among the technical subjects among students. The table 1 below gives a summary of the national enrolment in Agriculture from the year 2017 to 2022.

Table 1: National Agriculture Candidature in Kenya since 2017

Year	Total Candidature	Agriculture Students	Percentage
2017	611,952	247,265	40.41
2018	660, 204	278,658	42.21
2019	697,222	289,315	41.50
2020	734,350	300,878	41.00
2021	822,933	317,692	38.60
2022	877,773	327,993	37.37

Source: Kenya National Examination Council, 2022

It is evident that the enrolment in Agriculture is relatively high which can in turn provide an opportunity to impart practical agricultural skills to many students. Such students can then be better placed to join higher institutions of learning to pursue agriculture-related careers. Those who might not have the opportunity to further their studies after the secondary school level might as well join the world of work and utilize the practical agricultural skills they acquired in secondary school to boost on food security and create employment opportunities. The use of the school farm facility can help Agriculture students acquire practical agricultural skills which can enable them to opt for agriculture related careers as well take active part in agricultural activities. Despite the opportunities and prospects in the agricultural sector as well as the increase in student enrolment in the subject, Sebotsa, Nkurumwa and Kyule (2021) affirm that the sector is reportedly dominated by the elderly people while the out of school youth tend to be less engaged in agriculture. Several studies have linked this to various factors. Njeru and Gichimu (2015) for instance pointed out that most Kenyan youth lack access to credit and land which are vital to start up and sustain farming. The scholars however affirmed that the Kenyan government as well as several NGOs are trying to address this problem by developing financial packages that are tailored to the diverse production, marketing conditions as well as risk factors. However, the main cause behind the less engagement into agriculture by the youth is shortage of practical farming skills which incapacitates their ability to successfully fit into the agricultural value chain (Ouko et al., 2022). Unlike conventional agriculture which was mainly practised for subsistence purposes, agriculture in this 21st century has evolved which according to (Ninson & Brobbey, 2023) demands for sound agripreneurial skills among the present day farmers. It was therefore

imperative to establish the relationship between students' level of access to the school farm and the acquisition of agricultural skills.

Statement of the Problem

Education for sustainable development aims not only at enhancing literacy levels but also equipping learners with life-long skills that can help them to take a centre role in economic development. Agriculture is the mainstay of the Kenyan economy as the sector contributes to 30 percent of the Gross Domestic Product (GDP) and employs almost 80 percent of the national labour force (RoK, 2017). Practical Agriculture at the secondary school level can be very important in producing competent human resource who are capable of promoting self-employment as well as participating in agricultural production value chain hence food security. The school farm serves as the main avenue through which learners can put into practical use the theoretical concepts learnt in classroom through demonstrations, experiments and projects. Since Agriculture attracts high student enrolment in Kenyan secondary schools, practical teaching of the subject through use of the school farm can provide an opportunity for learners to acquire competence-based training which emphasizes on participatory learning. To the contrary, most of the out- of- school youth lack practical agricultural skills thus tend to be less engaged in agriculture-related activities and careers (Ogemah, 2017); Sebotsa et al.,2021 & Ouko et al., 2022). The rise in unemployment and food insecurity can be mainly attributed this, though there may be other underlying reasons. It would therefore be imperative to investigate the extent to which these students access the school farm for hands-on learning experience while in secondary schools.

Objective of the Study

i. To determine the relationship between the level of access to the school farm and the acquisition of agricultural skills among secondary school Agriculture students in Malava Sub-County

Materials and Methods

Location of the Study

The study was undertaken in secondary schools in Malava Sub-County, Kakamega County.The Sub-County covers an area of about 427.40 Km^2 of which 391.00 Km^2 is arable land. Geographically, the area lies at latitude 0^0 26'N and longitude 34^0 5"E. The Sub-County comprises of seven wards which include Butali-Chegulo, East Kabras, South Kabras, Manda Shivanga, Shirugu-Mugai, Chimuche and West Kabras. The Sub-County had a total population of 280,132 based on the 2019 census (Kenya National Bureau of Statistics, 2020). The average annual rainfall ranges from 1300mm to 1900mm per year. Eighty percent (80%) of the population in the Sub-County primarily depends on agriculture for survival with sugarcane being the chief cash crop (Shikanga et al., 2022). The preference for sugarcane farming in this area can be adduced to the presence of two sugar factories in the Sub-County which are Butali Sugar Company located in Butali- Chegulo ward and West Kenya Sugar Company located in East Kabras ward which offer a ready market for the crop. Apart from sugarcane farming, the edaphic and climatic conditions favour growing of other crops such as maize, sweet potatoes, cassava on a subsistence basis (Akenga, Ali, Anam & Walyambillah, 2014). Livestock farming is also practised with poultry keeping, dairy and beef farming being done on a small-scale basis. Despite all these prospects, Kinyangi (2014) ascertained that poverty levels are still significant due to farmers' ignorance, traditions and cultures which tend to lower adoption

rates of modern farming technologies.This study area was selected since besides agriculture being the main economic activity in the area, all secondary schools offer Agriculture and the enrolment trend in the subject has been on the rise over the past years based on empirical data from the Malava Sub-County Education Office (2019).

Target Population

Target population refers to the population to which the researcher wishes to generalize the findings of a study while accessible population refers to the portion of the target population that the researcher can access (Matula, Kyalo, Mulwa & Gichuhi, 2018). The target population for this study consisted of the 1532 secondary school teachers and 4327 form three students from the 50 secondary schools in the Sub-County (Malava Sub-County Education Office, 2019). The accessible population comprised of 171 teachers of Agriculture and 2532 form three Agriculture students. Secondary schools were targeted because it is at this level that Agriculture is taught as an independent subject and therefore the use of the school farm facility for acquisition of practical farming skills is crucial. Agriculture teachers were targeted for this study because they have in-depth knowledge on all aspects of Agriculture subject, including factors related to the school farm facility that contribute to practical teaching of the subject. Form four students would have been considered the most suitable respondents for this study since they have covered all the practical topics in secondary school Agriculture curriculum. However, by virtue of being candidates, form four students always have a tight revision schedule in preparation for the upcoming national examination. To avoid any inconvenience, the researchers opted to solicit data from form three agriculture students as they have already done subject selection and have also covered a considerable number of practical topics in Agriculture.

Sample Size and Sampling Procedure

The school was the sampling unit. There are 50 public secondary schools in Malava Sub-County. In determining the number of schools to participate in this study, the formula recommended by Nassiuma, (2000) was used. Based on this formula, 15 schools were sampled.

$$n=\frac{NC^2}{C^2+(N-1)e^2}$$

Where

n= required sample size (number of schools)
N= total population (50**)**
C= coefficient of variation (0.2)
e= margin error (0.05)

$$n=\frac{50\times0.2^2}{0.2^2+(50-1)0.05^2}$$

n=15

The schools were then put into their respective categories which include; National, Extra-County, County and Sub-County categories. Based on data from the Malava Sub-County Education Office (2019), there are 5 Extra-County, 13 County and 32-Sub-County schools. The Sub-County does not have any National school. The proportional sampling formula by Salkind (2014) determined the number of schools required from each category to participate in this study.

$n_h = n\frac{N_h}{N}$

Where;

n_h=Number of schools required from each school category

n= The required number of schools (15)

N_h= Total number of schools belonging to a particular school category

N= Total number of schools (50)

Based on this formula, 9 Sub-County, 4 County and 2 Extra-County schools were sampled. This ensured equal representation of all categories of schools so as to avoid bias. The school category was taken as the strata with an intention of finding out whether it has any moderating effect on the relationship between the dependent and independent variables. Since there are seven wards in the Sub-County, stratified random sampling was used to select representative schools from each ward to ensure even representation.

To determine the sample size of students to participate in this study, the formula by Yamane (1967) was used as follows.

$n=\frac{N}{1+N(e^2)}$

Where;

n= The required sample size

N= Population size (4327 form three students)

Allowable error= (0.08)

$n=\frac{4327}{1+4327(0.08^2)}$

n= 150

Mugenda and Mugenda (2003) recommend the sample size to be increased by at least 10 percent to take care of non-response. Based on this recommendation, there was an additional 15 form three Agriculture students. Therefore, a total of 165 form three Agriculture students from the 15 schools were sampled in this study. The total number of form three Agriculture students from each of the sampled schools was first to be determined. Proportionate sampling was then used such that the school with the highest number of form three students taking Agriculture contributed the highest number in the sample size. For unisex schools, simple random sampling without replacement was used to select the students to participate in this study. In mixed schools, stratified random sampling with gender being used as a basis for stratification was used in selecting students to participate in the study so as to avoid gender biases. Two separate class lists; one for the boys and one for the girls was made and from these lists.

For the case of Agriculture teachers, purposively sampling technique was used selected one teacher of Agriculture from each of the 15 sampled schools. In schools with more than two teachers of Agriculture, the teacher with more years of experience was selected to participate in the study. The teacher with more experience in teaching Agriculture was selected due to the vast experience in the organization and utilization of the school farm in comparison to a novice teacher. This gave a total of 180 respondents.

Table 2: : Sample Distribution by School Category

School category	Number of schools	Number of schools to be sampled	Number of students to be sampled	Number of teachers to be sampled
Extra-County	5	2	22	2
County	13	4	44	4
Sub-County	32	9	99	9
Total	50	15	165	15

Source: (Malava Sub-County Education Office, 2019)

Data Collection Procedure

The researcher first obtained an introductory letter from the Board of Post Graduate Studies and ethical clearance letter from the ethics review committee of Egerton University. These enabled the researcher to acquire an authorization letter to undertake research from National Commission for Science, Technology and Innovation (NACOSTI). The research permit enabled the researcher to obtain an authorization letter from the Kakamega County Director of Education (CDE). The authorization letter from the CDE enabled the researcher to obtain another authorization letter from the Sub-County Director of Education (SCDE). In schools, permission to solicit information from both sets of respondents was first sought from the principal. The questionnaires were hand delivered where the researcher first introduced himself, explained to the respondents the purpose of the study. To minimize on interference from other students, the sampled students were isolated from the rest then given the questionnaires. Both sets of respondents were given 30 minutes to read and fill the questionnaire and there after the researcher collected them. The researcher also visited the school farm to check on the facilities as well as the form three Agriculture classes to check on class size and recorded the observations on the observation guide. The researcher then counter-checked through each questionnaire to ensure that all items are filled so as to avoid cases of missing data

Data Analysis

Primary data collected from the field was first edited and cleaned. The responses were then coded to enable the researcher to summarize the responses given by the respondents for analysis. The data was analysed using Statistical Package for Social Sciences (SPSS) version 26 and presented using frequency distribution tables and percentages. Chi-square test for relationship was used as the inferential statistic to determine the relationship between the dependent and independent variables at 0.05 level of significance. The likert values were converted into categorical and continuous data for analysis purposes.

Ethical Considerations

According to Kumar (2019), it is the responsibility of the researcher to carefully assess the possibility of harm to the respondents during research. This should be done in every way possible by taking all reasonable precautions to ensure respondents are in no way exposed to harm or adversely affected in any manner; physically, emotionally or psychologically due to their participation in the research. The researcher began by explaining to the respondents the importance of the research. Since the study dealt with students below the age of 18 years, anonymity and confidentiality were highly observed. The anonymity was achieved by ensuring that the respondents did not indicate any form of identification on the questionnaires.

Confidentiality was achieved by not exposing the filled questionnaires to any other individual besides the researcher himself then afterwards destroying the questionnaires after coding and data analysis.

Results and Discussion

Location, Distance and Means of Access to the School Farm

Location of the school farm and its associated facilities may likely determine the number of times students visit the farm to monitor their projects during their free time or during the agriculture lesson time. It was therefore imperative to determine the location, approximate distance from the school and means of access to the school farm. Both sets of respondents were asked to indicate the location, approximate distance from school and means of access to the school farm. The responses obtained from both sets of respondents were analysed and presented in table 3 below.

Table 3: Location of the School Farm

School farm location		**Responses in frequencies and percentages**	
		Teachers' response	Students' response
Within the school compound	Freq	8	92
	%	53.3	55.8
Adjacent to the school	Freq	7	73
	%	46.7	44.2
Away from the school	Freq	0	0
	%	0	0

Students n=165 Teachers n=15

Both sets of respondents were further asked to indicate the approximate distance of the school farm from their school. Table 4 presents the analysed responses.

Table 4: Approximate Distance to the School Farm

School farm location		**Responses in frequencies and percentages**	
		Teachers' response	Students' response
Less than one Kilometre	Freq	15	165
	%	100	100
One Kilometre	Freq	0	0
	%	0	0
More than one kilometre	Freq	0	0
	%	0	0

Students n=165 Teachers n=15

Results from table 4 indicated that all the school farms in the sampled schools were located approximately less than one kilometre from the schools. Research findings from the researcher's observation guide affirmed that the average distance of the school farm among the sampled schools was approximately 170 metres, the furthest farm being located approximately 250 metres away from the school while the closest being 120 metres.

Each Agriculture lesson had been allocated 40 minutes on the timetable. Form one and two students having three lessons per week which translated to 120 minutes while form three and four students had been assigned four lessons per week translating to 160 minutes. It is worth noting that double lessons were scrapped off following the 2002 educational reforms (KIE (2006). Despite the fact that the school farms are located in close proximity to the schools which may minimize on time wastage, the forty minutes are most likely inadequate to enable the learners access the school farm and engage in any form of constructive activities as (Ogweno et al., 2021) reiterated that time limitation remains to be the main quagmire towards implementation of practical Agriculture in Kenyan secondary schools. Owing to the close proximity of the school farms, 100% of both sets of respondents indicated that they accessed the school farm by means of walking. This has no financial implication and therefore the learners can access the school farm with much ease at any time that seems convenient to them for the purpose of engaging in practical activities for skill acquisition.

Frequency of Visits to the School Farm

The study sought to establish how frequently students visited the school farm. Figure 1 summarily gives the findings from the student respondents.

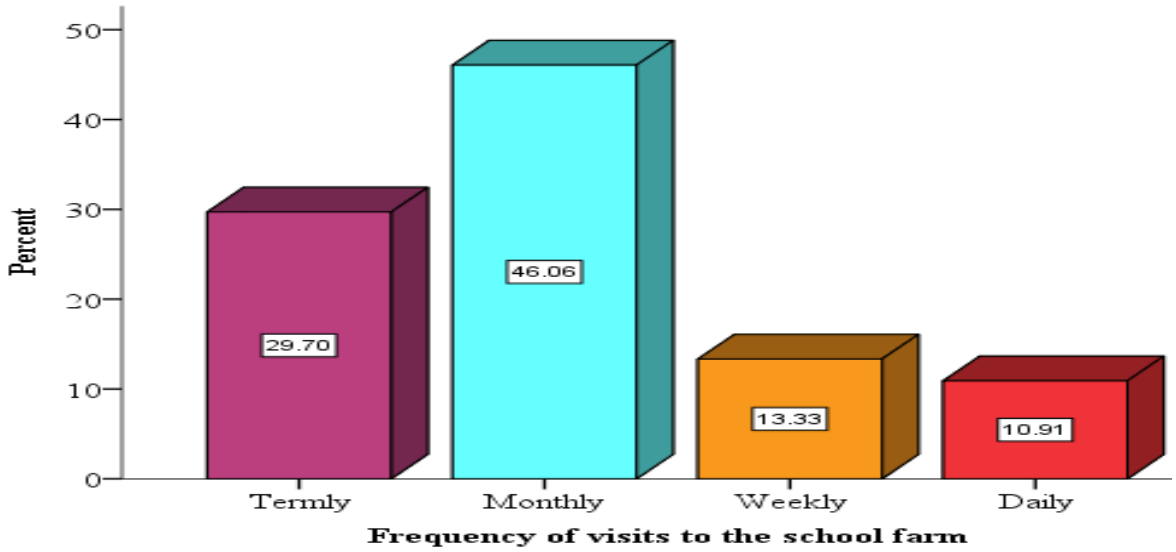

Figure 1: Frequency of Visits to the School Farm

From the findings, majority of the students (46.06 %) visit the school farm on a monthly basis while only 10.91 % do it on a daily basis. Having majority of students accessing the school farm on monthly basis does not prove beneficial to them as far as agricultural skill acquisition is concerned since this may not place them in a better position to carry out routine management practices in both crop and livestock production projects. Probing further into the specific types of projects on the school farms based on the observation guide, rabbit and poultry farming were the most common livestock enterprises while in crop production, vegetable farming was the most common enterprise.

Mutsami (2018) established that rabbits are hardy livestock which can feed on locally available feedstuff such as weeds thereby reducing on production costs. The ecological conditions of Malava Sub-County favour the growth of an array of weeds and this best validates the preference for enterprise in schools in Malava Sub-County. The term poultry refers to a wide range of domesticated birds. Based on the observation guide, chicken were the only type of poultry available on the school farms. Indigenous chickens, just like rabbits are hardy and have the ability to feed on a wide array of locally available feedstuff especially if kept under free range system (Kyule et al., 2015). Furthermore, Afodu et al. (2022) points out that their high degree of tolerance to pest and disease infection makes them popular among local farmers as this reduces on maintenance costs. This perhaps explains the reason behind the availability of this enterprise on most school farms in Malava Sub-County. Vegetables take less than one year from planting to harvesting and for this reason, their production costs tend to be relatively lower in comparison to perennial or horticultural crops based on study findings from Mukasa et al. (2017). This perhaps explains the preference for this enterprise in secondary schools in Malava Sub-County.

Management practices in rabbit and poultry farming which were the most common livestock enterprises such as feeding, parasite control and cleaning of structures housing the animals need to be done on a daily basis to ensure healthy animals (Mutsami 2018 and Mathiu, Ndirangu & Mwangi, 2021). Similar attention is necessary when carrying out management practices in crop production such as weeding and pest control (Schafbuch, Vincent, Mazur, Watson & Westneat, 2016). A past study by Ojuok et al. (2020) revealed that regular access to facilities such as laboratories improves learning outcomes among students through impacting directly on their knowledge-base and psychomotor skills. With such seldom visit to the school farm, these learners are less likely to have good knowledge and skills on some agricultural concepts such as the identification and use of farm tools and equipment, weed identification and control and identification of livestock breeds.

Having established how frequently the form three students of Agriculture visited the school farm, the study further sought to establish at what particular session the visits regularly were made. The respondents were therefore asked to indicate the frequency to which they visited the farm at different sessions. Table 5 gives a summary of the findings.

Table 5: Students' Access to the School Farm at Different Sessions

Session		**Frequency Of Access to The School Farm**					
		Never	Rarely	Sometimes	Often	Very Often	Total
During tea break	Freq	165	0	0	0	0	165
	%	100	0	0	0	0	100
During lunch break	Freq	165	0	0	0	0	165
	%	100	0	0	0	0	100
During Agriculture lessons	Freq	27	116	22	0	0	165
	%	16.4	70.3	13.3	0	0	100
In the evening after classes	Freq	15	50	42	58	0	165
	%	9.1	30.3	25.5	35.2	0	100
In the morning before classes	Freq	165	0	0	0	0	165
	%	100	0	0	0	0	100

During weekends	Freq	26	73	16	32	18	165
	%	15.8	44.2	9.7	19.4	10.9	100

n=165

Implementation of practical aspects of any curriculum, Agriculture inclusive is time demanding partly due to the need to frequently access physical facilities such as laboratories and workshops (Sharpe & Abrahams, 2020). With time limitation being one of the hindrances to successful curriculum implementation, Gatuura and Mugo (2020) advocated for remedial lessons during extra sessions such as morning hours to ensure achievement of teaching-learning objectives among all categories of learners inclusive of those with special needs. It was expected that since the 40 minutes allocated to Agriculture without any double lessons are hardly adequate to permit for timely syllabus coverage, teachers of Agriculture would make use of these extra sessions for practical implementation of Agriculture curriculum on the school farm. However, it was ironical that majority of the students reported never accessing the school farm during tea breaks, lunch breaks and morning sessions. Weekends were the most preferred sessions for accessing the school farm. Students in boarding schools spend most of their time in school and therefore better placed to make use of weekends for accessing the school farm in comparison to their counterparts from day schools. It is worth noting that weekends which happen to be on Saturdays and Sundays are mostly set aside for co-curricular and religious activities thus may not be fully used for practical implementation of Agriculture. Furthermore, a study by Kaliwa (2023) established that curriculum implementation during weekends involves extra levies which may not be affordable to learners from poor backgrounds especially those from public day schools who happen to be the majority in Malava-Sub-County.

A study by Evelia (2014) established that a combination environmental and school factors may contribute to students' access and utilization of the school farm. This study narrowed down to establish how certain school factors contributed to students' access to the school farm. The respondents were therefore asked to indicate their level of agreement to how some school factors contributed to the form three Agriculture students' access to the school farm. The table 6 gives a summary of the findings

Table 6: School Factors Influencing Students' Access to the School Farm

Item	**Responses in frequencies and percentages**						
		SD	D	U	A	SA	Total
The school farm is located far away making it difficult for students to frequently access the facility	Freq	71	79	15	0	0	165
	%	43	47.9	9.1	0	0	100
All the activities on the school farm are done by farm workers therefore no need for students to frequently access the facility	Freq	71	17	34	27	16	165
	%	43	10.3	20.6	16.4	9.7	100
Almost the entire school farm is reserved for growing crops and rearing animals for sale by the school management and therefore no need for students to access the farm	Freq	12	33	17	37	66	165
	%	7.3	20	10.3	22.4	40	100
	Freq	0	19	1	27	118	165

Access to the school farm is limited to other students except for the form fours during KNEC Agriculture project	%	0	11.5	0.6	16.4	71.5	100
Only students who commit offences are taken to the school farm to offer labour as a way of punishment and therefore no need to frequently access the facility	Freq	32	36	4	59	34	165
	%	19.4	21.8	2.4	35.8	20.6	100
The time allocated to Agriculture on the timetable makes it difficult for students to frequently access the facility for practical activities	Freq	0	11	11	73	70	165
	%	0	6.7	6.7	44.2	42.4	100

Location as a factor did not seem to limit students' access to the school farm since majority of the students disagreed to this statement with only a negligible 9.1 percent being undecided. Majority of the student respondents (43 %) also strongly disagreed to the statement that all the activities on the school farm are done by farm workers thereby denying students the chance to access the facility. This indicates that schools in Malava Sub-County provide an opportunity to learners to access the school farm irrespective of who offers the labour.

With regard to allocation of a larger portion of the school farm to the school management for commercial purposes at the expense of practical agriculture, majority of the student respondents (66.4 %) generally agreed to the statement while only 27.3 % were in disagreement. These findings resonate with those from Waiganjo (2021) conducted in Nakuru County which established that most school principals always tend to view the school farm as a potential source of revenue which can be generated from the sale of crop produce and livestock products thus allocating a larger portion for commercial purposes.

With regard to KNEC projects, the students were asked to give their level of agreement to whether their access to the school farm is limited because of the KNEC projects. An overwhelming majority of the student respondents (71.5 %) strongly agreed to the statement. Reaffirmation from the teachers indicated that 53.3 percent agreed to the statement. KNEC projects are conducted by the form four students as part of their KCSE examination. According to Manyali (2015), these projects are mandatory for any school offering Agriculture and are always scheduled to begin in early January and end in September. This means that for a whole eight months, the students in the other forms are restricted from frequently accessing the school farm. This completely violates the two fundamental objectives of teaching Agriculture in secondary schools which according to KIE (2006) are to develop basic principles of agricultural production relevant to Kenya in general and specifically to learner's own environment as well as involve learners in practicals which aim at assisting them to acquire useful agricultural skills.

Regarding the use of the school farm as a tool for punishing errand students, majority of the students (56.4 percent) were in agreement to the statement. Findings from the teachers were in line with those from students as 60 percent of the teachers agreed to the statement. Agriculture as a subject has for a very long time been marred with colonial legacy especially in the developing world as it is associated with working under the hot sun over meagre benefits (Jones, 2019). Agriculture is much associated with manual work and low paying jobs and for this reason, Chemjor (2016) points out that the subject is reserved for the low achievers in most schools. The continuous use of the school farm as a tool for punishing errand students

rather than as an instructional facility aggravates the situation and significantly contributes to students' negative attitude towards the subject. A study conducted by Kirimi (2017) on factors influencing choice of Agriculture revealed that the excessive manual activities involved in Agriculture tends to make girls shy away from the subject. Similarly, this could be the reason for the low number of female students in Agriculture in Malava Sub-County.

Regarding time allocated to Agriculture, the respondents were asked to give their level of agreement to how time as a factor influenced their access to the school farm. Based on the findings, 42.4 % of the student respondents strongly agreed that the time allocated to Agriculture on the timetable makes it difficult for them to frequently access the school farm for practical activities, 44.2 % agreed to the statement, 6.7 % were undecided with a similar percentage disagreeing to the statement. From the findings, it is evident that the majority (86.6 %) agreed that the time allocated to the subject is not enough to allow for coverage of both practical and theoretical aspects of the subject. Confirmation from the teachers indicated that 100 percent of the teachers agreed to the statement. The secondary school Agriculture syllabus comprises of 33 topics coupled with several suggested practical activities to be conducted on the school farm thus making it one of the widest syllabi in the secondary school curriculum (KIE 2006). Coincidentally, the form three Agriculture syllabus is the widest as it comprises of ten topics as outlined by (Kahuria et al., 2018). By virtue of being pre-candidates, more focus is given to early syllabus completion, and this could give a possible explanation behind the low access to the school farm during Agriculture lesson time.

The much focus academic excellence at the expense of skill acquisition in the 8-4-4 system of education leading to churning out of youth devoid of hands-on skills necessitated a gradual shift to CBE (Ndambuki et al., 2024);(A. Karani et al., 2021); (Njagi, 2020). In the CBE, changes have been made laying more emphasis on the practical implementation of vocational subjects such as Agriculture. Agriculture lessons have been allocated four lessons with a double lesson timetabled once per week. This places the learners in a better position to access the school farm and engage in practical activities during Agriculture lessons. Furthermore, the issue of wide syllabus has been addressed. The agriculture and nutrition curriculum comprises of four topics which include; conservation of the agricultural environment, crop production, livestock production and agricultural technology. The same topics run across the various grades. With such a few topics to be covered, teachers are better placed to implement both the theoretical and practical aspects of the subject which will in turn enhance skill acquisition among the learners.

To determine the relationship between level of access to the school farm and the level of acquisition of agricultural skills, chi-square test for independence was used. The summary is presented in table 7

Table 7: Level of Access to the School Farm and Level of Acquisition of Agricultural Skills chi-square test

Scale	Value	Df	P-Value
Pearson Chi-Square	12.103	12	.048
N	165		

The p value of the test was .048, which is lesser than .05 indicting that there is a relationship between frequency of access to the school farm and the acquisition of agricultural skills. These findings resonate with several other studies which established that the degree of access to resources and facilities within a

learning institution greatly determines students' skill and knowledge acquisition (Kannan & Lawal, 2021; Ojuok et al., 2020; Wambua et al., 2018).

Conclusions

- Despite the close proximity to the school farm, majority of the Agriculture students hardly visit the facility on a daily or weekly basis for the purpose of checking on their projects. This is a clear indicator that project-based learning is not commonly used in the implementation of Agriculture curriculum secondary schools.
- Access to the school farm especially during lesson time is limited mainly due to the need for early syllabus coverage against less time allocated to the subject on the timetable.
- Access to the school farm during other extra sessions such as tea breaks, lunch breaks, morning, evening and weekends is also limited.
- Presence of KNEC projects on the school farm limits students in the lower classes from frequently accessing the school farm for instructional purposes.
- Commercialization of the school farms by the school managements for the purpose of generating extra income for the school tends to limit students' access to the school farm.
- The frequent use of the school farm as a tool for punishing errand students limits students' access as they associate the facility with punishment rather than practical teaching of Agriculture for skill acquisition.

Recommendations

- Teachers of Agriculture as the curriculum implementers with financial support from the school administration need to guide learners through initiating projects on the school farm and take a supervisory role to ensure the learners access the school farm regularly to manage these projects.
- Teachers of Agriculture need to adhere to the KICD guidelines of implementing both the practical and theoretical aspects of the subject within the stipulated time. This can best be achieved by integrating the use of learner-centred teaching methods such as project based learning and demonstrations.
- Secondary school timetabling committees should strive to timetable Agriculture lessons before these extra sessions such that practical lessons on the school farm can be carried out during some of these sessions. Furthermore, teachers and learners especially those from day schools should be willing to spare some time during weekends to access the school farm for instructional purposes.
- School managements through the Boards of Management and the principals need to ensure adequacy of the school farm by using means such as purchasing or leasing extra land from the surrounding community. This will ensure that the form four candidates successfully carry out their KNEC projects which are always scheduled to commence in February and end in September without jeopardizing access to the school farm among the students in the lower classes. This will also ensure that secondary schools have adequate school farms thus well prepared for implementation of the Competence Based Curriculum which is considered resource intensive.
- The Kenyan Government through the Ministry of Education needs to set guidelines and regulations on how allocation and utilization of the school farm is done. This will reduce on the excessive commercialization at the expense of practical curriculum implementation. This will perhaps enhance access to the facility among the learners.

- Teachers of Agriculture having been vouchsafed with the responsibility of curriculum implementation should ensure that the school farm is strictly used as an instructional tool rather than a tool for punishing errand students. They should take a centre stage in dissuading other teachers from using the facility for punishment purposes. This will make learners to perceive farming as a dignified and profitable venture thus willing to frequently visit the school farm which in turn will improve on their levels of practical farming skills.
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