

**THE EFFECTIVENESS OF OUTREACH PROGRAMME AS EXPERIENTIAL
LEARNING FOR TRAINING STUDENTS AS LIVESTOCK EXTENSION
WORKERS IN TANZANIA**

BY

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
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ABSTRACT

The purpose of the study was to determine the effectiveness of weekly outreach programme as an experiential learning for students trained as livestock extension workers in Livestock Training Agency (LITA) in Tanzania. About 80 students who graduated in Morogoro and Mpwapwa campuses from year 2006 to year 2013 were sampled for interview. Interviews were also made with instructors. The focus was on four key areas; the process of organizing and implementing outreach programme, practical skills gained by students, the practical competence of students in providing knowledge and skills to livestock keepers before and after outreach activities and the influence of the outreach programme on career development. Data on the socio-economic characteristics of respondents were analyzed by descriptive statistics, while paired t-test was used to determine practical competence of students in providing knowledge and skills to livestock keepers before and after outreach activities. A Chi Square Test was also employed to compare quantitative data from two LITA campuses. The analysis of opinions from students on the influence of outreach programme on career development involved descriptive statistical analysis. The study established that students were visiting livestock keepers mainly during weekends in groups of four to six students per individual livestock keeper. Verbal communication was the main delivery mechanism of information to livestock keepers. Very few practical skills on animal health and animal production were gained by students as a result of outreach programme. This study also revealed that the competence levels of students changed from not being competent to competent after weekly outreach programme. Weekly outreach programme also exposed students to the real work of livestock extension agent. It thus recommended that other methods of extension like leaflets and posters be used by the students. Similarly, there should be a rigorous monitoring system by instructors.

DECLARATION

I, Frida Francis Lwala, do hereby declare to the Senate of Sokoine University of Agriculture, that this dissertation is my original work and that it has neither been submitted nor being concurrently submitted for degree award in any other institution.

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Date

The above declaration is confirmed by

Dr. Emmanuel Rwambali
(Supervisor)

Date

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DEDICATION

I devote this work to my parents Ivonne Kikwati and the late Francis Lwala who laid the foundation for my education which made me what I am today.

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LIST OF ABBREVIATIONS AND ACRONYMS

AHPC	Animal Health and Production Certificate
AIDS	Acquired immune deficiency virus
CO	Class only
COP	Class and outreach programme
CPOP	Class practical and outreach programme
DAH	Diploma in Animal Health
DAP	Diploma in Animal Production
DRMTC	Diploma in Range Management and Tsetse Control
HIV	Human immuno deficiency virus
LGAs	Local Government Authorities
LITA	Livestock Training Agency
LITIs	Livestock Training Institutes
MLFD	Ministry of Livestock and Fisheries Development
OP	Outreach program only
PO	Practical session only
POP	Practical and outreach programme

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Decentralization of the authority over administering development programs to local communities has recently become widespread in the developing world. These initiatives have transferred responsibilities from central line ministries to local government authorities. Such initiatives were first introduced in the 1980s in several countries including Brazil, China, El Salvador, Georgia, India, Mexico, South Africa and Uganda (World Bank, 2000). In Uganda, for instance decentralization has been characterized by a transfer of powers, functions, and responsibilities for planning and implementation of agricultural extension services from the Ministry of Agriculture, Animal Industry, and Fisheries to district local governments (World Bank, 2000).

In Tanzania delivery of livestock extension services is coordinated by Local Government Authorities (LGAs) whereby the Ministry of Livestock and Fisheries Development (MLFD) is responsible for livestock policy formulation, guidelines and technical backstopping (MLFD, 2013). Moreover the MLFD has a mandate of training livestock field workers. The training programme is implemented by seven campuses of Livestock Training Agency (LITA) formerly known as Livestock Training Institutes (LITIs); namely Tengeru, Morogoro, Mpwapwa, Madaba, Temeke, Buhuri and Mabuki (MLFD, 2013). LITIs were not performing efficiently and effectively on their core functions (provision of quality training, production of quality livestock, livestock products and by products), therefore the Tanzanian Government through the MLFD decided to establish LITA. The Agency has been formed by merging the LITIs and at the same time expanding and improving the scope and mandates of these institutes (LITA, 2013).

Most of the LITA campuses are offering two-year diploma courses in Animal Health, Animal Production, Animal Health and Production and Range Management and Tsetse Control (the latter is only offered at Morogoro campus). The LITA campuses also offer a two-year certificate course in Animal Health and Production. In addition, these campuses conduct outreach services (namely weekly outreach programme). This outreach academic training is a form of experiential learning exercise and is implemented by second year (final year) certificate and diploma students or third and fourth semester students under semester system (LITI, 2004). Respective tutors select livestock keepers from nearby villages or communities and attach students to individual farmers and students are required to visit them on a weekly basis.

The main objective of outreach programme provided by LITA is to enhance cooperation between the agency and nearby villages (communities) so that students can learn from livestock keepers experiences and at the same time disseminate improved agricultural and livestock production technologies learned in classes (LITI, 2004). The specific objectives are for students to identify livestock keepers' needs, develop and implement agriculture and livestock programme based on identified needs and produce a report as part of course assessment (LITI, 2004). This weekly outreach programme provides students with an exposure to the real world of work.

1.2 Problem Statement and Justification

In Tanzania, LITIs outreach programmes have been used since the establishment of the first livestock training institute at Mpwapwa in 1930. These weekly outreach programmes were intended to bring campuses closer to communities, to enable students learn through hands on experience, and currently to prepare graduates from LITA to work with extension services in order to improve livestock productivity. However, according to Community

Tool Box (2013) it was observed that for outreach programme to be effective it should meet people where they are, be respectful, listen to community, build trust and relationships, get the word out in a non-stigmatizing manner, offer service and information in a variety of locations (including home visits) and at non-traditional times especially after work hours.

Similarly, the determination of the effectiveness of LITAs outreach programme as an experiential learning is very important. Previous work by Lugeye (1986) revealed that lack of funds and funds release, staff motivation, choice of the villages/communities, teaching materials and transport facilities were the factors affecting implementation of outreach programme in LITIs, however very little has been done to determine the effectiveness of same from the student's point of view. Therefore, there was a need to determine from student's perspective the effectiveness of LITAs outreach programme.

The results from this study will possibly assist in proposing guidelines that will be used to improve the effectiveness of weekly outreach programme which is conducted by students trained by LITA as Livestock field workers in Tanzania. Similarly, lessons from this study might assist other institutions or trainers who intend to implement similar programmes.

1.3 Objectives

1.3.1 General objective

To determine the effectiveness of LITA's outreach programme as an experiential learning for training students as livestock extension workers in Tanzania.

1.3.2 Specific objectives

- i) To assess the process of organizing and implementing outreach programme provided by students trained at LITA.
- ii) To identify the practical skills gained by students as a result of outreach programme.
- iii) To determine the practical competence of students in providing knowledge and skills to livestock keepers before and after outreach activities.
- iv) To determine the influence of the outreach programme on career development.

1.4 Research Questions

- i) How is the LITA outreach programme being organized and implemented?
- ii) What are practical skills gained by students as a result of outreach programme?
- iii) What are the practical competences of students in providing knowledge and skills to livestock keepers before and after outreach activities?
- iv) What is the influence of LITAs outreach programme on career development?

1.5 Theoretical Framework

Outreach programme is experiential learning whereby LITA students visit livestock keepers and share knowledge and skills during their training, in addition they apply knowledge and skills learned in class in work environment. It is a training methodology whose philosophical basis revolves around experiential learning theory. The underlying understanding of this theory is that; practical experience plays a crucial role in the learning process. Experiential learning is defined as the process whereby knowledge is created through the transformation of experience. The experience is normally in cyclical stages which are concrete experience (do), reflective observation (observe), abstract conceptualization (think) and active experimentation (plan). Experiential learning also

represents the form of learning whereby students have a chance to acquire and apply knowledge, skills and feelings in an immediate and relevant setting (Kolb and Kolb, 2005).

1.6 Conceptual Framework

In this study there are three sets of independent variables that appear to influence the effectiveness of outreach programme (dependent variable) as an experiential learning for students under LITA in Tanzania. The independent sets of variables include the process of implementing outreach programme, practical skills gained by students as a result of LITA outreach programme and the influence of outreach programme on career development. The independent variable and dependent variable interact in context of Experiential learning programme for training livestock extension workers under LITA in Tanzania. Similarly, the dependent variables could be gauged through the practical competence of providing knowledge and skills to livestock keepers (Fig. 1).

Contextual factors

Independent variables

Dependent variables

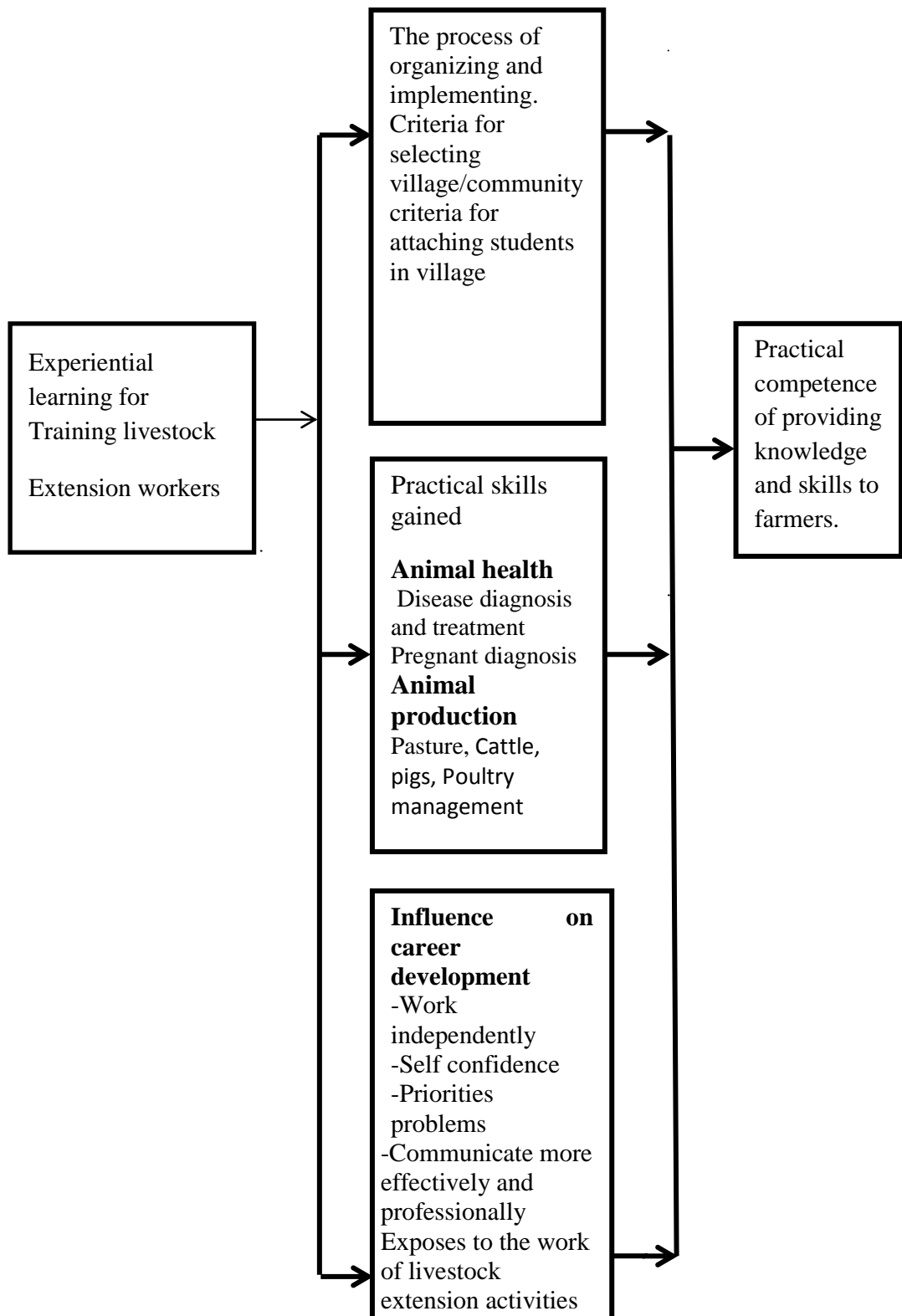


Figure 1: Conceptual framework.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Concept of Outreach

The definition of outreach is still debatable though most people interpret it as a process that involves going out from a specific organization or centre to work in other locations with sets of people who do not directly benefit themselves of the services provided by that centre. Whilst the central connotation of outreach is to physically go outside the institution, a number of other meanings have grown to the word to include activities that make people in different locations or groups aware of what an organization or centre can offer, provision of learning programme in informal community locations (a delivery mechanism), liaison and contact with other organizations or particular sets of people (Dewson *et al.*, 2006).

According to Lugeye (1986), outreach has been used in many years all over the world under a variety of terms such as experimental learning, farmers training, field experience, extension approach, field practical, internship programme and experience based learning. These outreach terms basically have the same or similar purposes and objectives but different in approaches. Thus, the weekly outreach provided by LITA students is both experience based learning, farmers training and extension approach. Outreach as an experiential learning where students apply concepts and skills learned in the classroom to real world applications within the local community is an old concept of learning which suggest that theory must be reinforced with practice and practices need sound theory to guide their conduct (Kolb and Kolb, 2005).

Oladele *et al.* (2011) observed that, in higher learning situations, experiential learning is conducted in the form of field based experiences or by crediting of prior learning.

Incorporating field experiences into institutional programmes is what many institutions are drifting towards in order to enhance the quality of their programmes. In agriculture extension context, effectiveness refers to ability of any programme to achieve its goals (Burton *et al.*, 1997). Thus, outreach programme effectiveness can be conceptualized as its ability to mobilize the capacities to meet educational demand of small scale farmers for bringing about increased agricultural productivity.

2.2 Importance of Outreach Programme as Experiential Learning for Training Livestock Field Workers

In showing the importance of outreach programme in training livestock field workers, Sharrif (2007) stated that students should be initiated in reflection grounded in real experiences rather than remaining conceptual. This further increases professionalism as the graduate is better grounded to go out and contribute meaningfully in society and at working place. In the same lines Oloruntoba (2008) reported that the farm implementation of practical programme improves competences in many agricultural tasks. This further reaffirms the expectations that the practical training programme reinforces the theory delivered in class and thus, helps in preparing better graduates for future employment opportunities.

Nurain *et al.* (2011) further supported the argument that on farm placement is one of the effective approaches to improve students' abilities in their attitudes, knowledge and skills, no matter what type, level or length of training under consideration. This means that training is not simply restricted to production aspects but rather an application of knowledge, skill and change in attitude needed to improve farmer's ability in solving production problem and adopting improved practices and techniques at the field level.

2.3 Organizing and Implementing Outreach Programme

As noted from Community Tool Box (2013), in order to organize and implement an effective outreach programme, outreach organizers should make sure that the service meet people where they are, be respectful, listen to community, build trust and relationships. Similarly, it should get the word out in a non-stigmatizing manner, offer service and information in a variety of locations (including home visits) and at non-traditional times, especially after working hours. Such an outreach programme should make written information as friendly as possible and easy to understand. In addition to that it should provide information in the primary language of those who will use the service. For such a service to be effective you need well-trained and knowledgeable personnel, provide active supervision, encourage teamwork and also start with activities that are easier and most comfortable and move toward less familiar and more challenging ones.

Dewson *et al.* (2006) on the other hand listed tools that could compliment the delivery of outreach programme to include leaflets, newsletters, advertising stalls and displays. Among the list there should be dedicated events, with the common location being local community institutions such as libraries, community centres, and markets. Compared to traditional service providers, outreach services are provided closer to individual's residence, are voluntary, and have fewer, if any, enforceable obligations.

Furthermore, Barat (2011) noted that outreach activities should begin as early as possible. The outreach programme should contain a strategic plan formulated at the outset that analyzes the social and political context. The plan should identify priorities, goals, challenges, resources and potential partners. The outreach programme should create a comprehensive but flexible plan of action. Outreach materials and activities should be organized on a calendar that accounts for variations in activity. Outreach programmes

should distinguish between the different audiences that they should target. Each of these groups may respond better to different types of engagement and they may have different needs or present different potential contributions and obstacles. The different target groups may include the general public, women, disabled persons, indigenous groups, religious or community leaders, youth and children.

2.4 Practical Skills and Competence Gained by Students as a Result of Experiential Learning Programme

Oloruntoba (2008) reported that the farm practical year programme which is one of experiential learning improved students' competence in many agricultural tasks. This confirms the expectations that the practical training programme reinforces the theory from the class and thus, helps in preparing better graduates for future employment world. It was also reported that students were already competent in other twelve different tasks before undergoing the practical training programme, a clear indication that the practical training programme was not solely responsible for their change in competency levels. The changes recorded could be probably being attributed to the practical training received at school or to some other sources, such as from parents who might have demonstrated the skills to their children on their farms. On the other hand, it was reported that students were not competent before and even after undergoing the practical training programme in four of the agricultural practical skills. In other words a practical training cannot assure a one hundred percent success in every skill.

Similarly, the study done by Bukaliya (2012) exposed the fact that students did not fully benefit from the internship attachment in obtaining the relevant knowledge and practical experience to assist them to better adapt to their future working environment. This indicated the fact that students were not properly mentored since they were given

appropriate or specific tasks to expose them to a proper job setting and experience. In connection to that Mofesola (2012) stated that graduates of colleges are expected to have acquired enough practical skill to enable them manage their own farms with little or no supervision assistance. They are also expected to be able to work directly in units of large commercial farms, agro-based industries or any relevant government organization. Hence the curriculum emphasizes the practical aspect of the training to a very large extent.

Therefore, the importance of experiential training cannot be overemphasized because it boosts the student's practical experience and exposure which in turn lays foundation for student's development and nation building. In addition Edziwa *et al.* (2012) highlighted that the programme enabled students to be physically involved in some processes which were abstractly done at college. However, they were concerned that students were used as cheap labour due to inadequate communication between the college and providers of attachment places.

2.5 Influence of the Outreach Programme as Experiential Learning on Career Development and Enhancing Employability Skills

Kaye *et al.* (2010) thought that perceived benefit of experiential training to students is early interaction with the community so that students would learn more about the different communities that have different cultures and lifestyle from theirs. This will build or strengthen relationships with the community; also they get exposure to the community in which they will eventually work. Also they thought that community placement for professional training regardless of discipline enhances students' achievement of adaptation and participation in change, application of problem solving in new and future situations with the community serving as a real-life context. Similarly, experiential training evokes creative and critical thinking and adoption of holistic approach to problems and situations.

As the students interact with different communities and different providers in the community, the students acquire appreciation of diverse viewpoints. Working in small groups at training sites encourages successful team collaboration, trains students in leadership skills and optimizes utilization of relevant and varied resources.

Laursen *et al.* (2012) noted that school outreach experiences provides three important elements of professional socialization: Specialized knowledge and skills needed to succeed in the profession, direct involvement with the profession's activities, colleagues, and personal meanings, and personal investment in the role and status of the profession. Outreach involvement exerted different patterns of influence on career paths. For some students, outreach participation confirmed career intentions, and provided knowledge and skills needed to succeed in the chosen path. For others, participation facilitated a change in career direction by providing low-risk opportunities to explore an alternate career and discover new career options. Also students' involvement in outreach and engagement promoted their professional growth as they learnt skills, deepened and applied their knowledge, and made meaningful connections.

On the other hand, Ayarkwa *et al.* (2012) indicated that development of students' skills and exposure to the work environment is the main reasons for organizations to place students for internship or field attachment. In these organizations they get exposed to the responsibilities expected in their areas of interest. The same research also showed that some organizations take in trainees in order to beef up their workforce and to be able to identify potential employees from the students' pool. Students must develop core marketable skills for them to be able to compete favourably for available positions within the organizations that provide for field attachment. The important skills that trainees acquired included communication, time management and belief in one's self.

Yusoff *et al.* (2010) observed that employers nowadays do not consider a graduate's academic achievement alone as sufficient for hiring them. They sometimes look for achievement other than academic such as employability skills which they find to be important in the recruitment process. It is demonstrated that the experiential training programme develops graduates' employability skills through activities that gave them an exposure to work practices as interns. The experiential training also strengthens employability skills of students through relevant work experience. Azami *et al.* (2009) also identified the idea that beyond good academic qualifications, employers also require new employees to be equipped with relevant capabilities, which have non technical attributes, for example, abilities and personal qualities. Moreover employers require that entry level graduates be able to communicate clearly, effectively and professionally. They need to have solid work ethics, able to work in teams, make decisions, priorities and solve problems, think independently and manage their work and supplement their theoretical training. All of these may be gained through experiential learning.

2.6 Effectiveness of Outreach Programme

Assessment of outreach programme outcomes takes considerable time and resources as the outcomes from outreach take longer to achieve as customers are harder to reach and thus, by definition, usually harder to help. These customers are normally disengaged from mainstream services and require some time and investment to build trust and confidence in the service. Once engaged, customers often require lengthy interventions to overcome barriers to work. Outreach services are often peripheral activities and provision is patchy (Dewson *et al.*, 2006).

From the Community Tool Box (2013) it is identified that outreach can be the foundation of an effort to improve well-being of a population, or one component of it. Whatever

measure you employ, outreach will be most effective if you know your users and community, and they should be creative, trustworthy and very determined. No single outreach practice works for all initiatives. Likewise, in one initiative, what works in one community might not work in another. A broad range of options increases the chances of success in an outreach effort. Similarly, it is noted that timing, credibility and sensitivity of outreach staff, organization and publicity of the outreach effort, are the factors that seem to impact the success of outreach activities.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Area

The research study was conducted at two LITA campuses, Morogoro and Mpwapwa which were purposefully selected to represent other campuses where training of livestock field workers is done and outreach programme is conducted. Mpwapwa was selected because is the pioneer campus as compared to the remaining campuses, while Morogoro campus was selected because is the only campus which offers a diploma course in Range Management and Tsetse Control as well as all other courses for training livestock extension workers in Tanzania.

3.2 Study Design

A cross-sectional study design was used since it is possible to collect information from a representative sample of a population at one point in time (Babbie, 1990).

3.3 Sampling Procedures and Sample Size

The target population for this study consisted of LITI/LITA students graduated in year 2006 to 2013, specifically those who participated in weekly outreach programme. The list of students and their contacts details were obtained from the respective LITA campuses. According to Bailey (1998), regardless of the population a sample size of 30 respondents can bring meaningful analytical results. Therefore simple random sampling was used to get 40 students participants from each campus. In total there were 80 representatives of students. In addition to the representative samples, six key informants (three from each campus) were also interviewed during the study; these key informants were LITA tutors

essentially knowledgeable enough to provide relevant information related to weekly outreach activities planning and organization.

3.4 Data Collection Procedure

Primary information from students was collected by use of structured interview schedule; the instrument consisted of both open and closed ended questions, after being checked for validity by experienced researchers in social sciences. Also semi structured interview schedule was used to collect information from key informants.

3.5 Data Processing and Analysis

Data collected from respondents was summarized, coded, and analyzed by descriptive statistics on the socio-economic characteristics of respondents, while paired t-test was used to determine practical competence of students in providing knowledge and skills to livestock keepers before and after outreach activities. A Chi Square Test was also employed to compare qualitative data from two LITA campuses. The analysis of opinions from students on the influence of outreach programme on career development involved descriptive statistical analysis using cross tabulation and frequencies.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Respondents Demographic and Socio Economic Characteristics

Based on the sampling procedure the distribution of respondents by LITA campuses was represented as 50% of graduates coming from Morogoro while the other 50% of graduates coming from Mpwapwa (Table 1).

Table 1: Percentage distribution of respondents by LITA campuses (n=80)

LITA campus	Number	Percent
Morogoro	40	50
Mpwapwa	40	50
Total	80	100

Among respondents from both campuses, 41.25% were females while 58.75% were males. Further segregation indicated that among respondents from Morogoro 22.50% were females and 33.75% were males. On the other hand respondents from Mpwapwa, constituted 18.75% females and 31.25% males (Table 2).

According to results the number of female respondents is less than that of their male counterparts who graduated in both campuses. This might be indicating unequal enrolment of students between females and males in most of the tertiary learning institutions which has consequently led to less number of female extension workers in the country. Based on the fact that women contribute a lot of their labour in agriculture, Harvey (2012) suggested recruiting, training and employing more women extension staff, since these will be able to

work directly with women farmers who are normally less accessible by male extension staff.

Table 2: Percentage distribution of respondents by LITA campuses and by sex (n=80)

Sex	Morogoro		Mpwapwa		Total	
	n	%	n	%	n	%
Female	18	22.50	15	18.75	33	41.25
Male	22	27.50	25	31.25	47	58.75
Total	40	50.00	40	50.00	80	100.0

Another socio- economic characteristic examined was age of the respondents. The results indicated that, most of them (53.80%) were aged between 20 and 25 years, but very few (8.80%) had ages above 37 years (Table 3). The young age of most graduates is expected and therefore not surprising because they are graduates of the recent years. However, for the older ones it is striking but at the same time it is encouraging to demonstrate the fact that mature in-service candidates are still being enrolled for further studies.

Table 3: Percentage distribution of respondents by age categories (n=80)

Age category in year	20-25		26-31		32-37		Above 38	
	n	%	n	%	n	%	n	%
Morogoro	11	13.75	18	22.50	6	7.50	5	6.25
Mpwapwa	11	13.75	25	31.25	2	2.50	2	2.50
Total	22	27.50	43	53.75	8	10.00	7	8.75

Further analysis with regard to the courses that were undertaken by respondent indicated that both campuses (Morogoro and Mpwapwa) offered similar courses except that of Diploma in Range Management and Tsetse Control (DRMTC) which was only offered at Morogoro. In all campuses 35.00% of respondents graduated in Diploma in Animal Health (DAH), followed by 33.75% of those who graduated in Diploma in Animal Production (DAP). Similarly, further analysis showed that 16.25% of the respondents from Morogoro campus were those who graduated in DAP, while the smallest number 7.50% were those who graduated in DRMTC. Similarly, 21.25% of respondents from Mpwapwa graduated in DAH, alongside a small percentage of respondents (11.25%) who graduated in Animal Health and Production Certificate (AHPC) (Table 4).

Table 4: Percentage distribution of respondents by course studied at LITA (n=80)

Course	AHPC		DAP		DAH		DRMTC	
	n	%	n	%	n	%	n	%
Morogoro	10	12.50	13	16.25	11	13.75	6	7.50
Mpwapwa	9	11.25	14	17.50	17	21.25	00	00.00
Total	19	23.75	27	33.75	28	35.00	6	7.50

AHPC (Animal health and production certificate), DAP (Diploma in animal production), DAH (Diploma in animal health), DRMTC (Diploma in range management and tsetse control).

According to results 38.75% of respondents graduated in year 2010 -2011, while a few (10.00%) graduated in year 2006-2007. More results indicated that 20.00% respondents from Morogoro graduated in year 2012 -2013, while a few (5.00%) respondents graduated in 2008 -2009. About 23.80% of Mpwapwa of respondents graduated in year 2010 -2011 (Table 5).

Table 5: Percentage distribution of respondents by campus and year of graduation (n =80)

Year of graduation	2006-2007		2008 -2009		2010 -2011		2012-2013	
	n	%	n	%	n	%	n	%
Morogoro	8	10.00	4	5.00	12	15.00	16	20.00
Mpwapwa	0	00.00	8	10.00	19	23.75	13	16.25
Total	8	10.00	12	15.00	31	38.75	29	36.25

4. 2 Organization and Implementation of Outreach Programme (OP) by LITA

The process of organizing and implementing OP in the livestock training institutes currently known as agencies is important because it determines how effective the OP shall be in terms knowledge acquisition by students, exposure of students to the real work of extension services, students career development and improved practical skills. Variables that were of interest with respect to the process of organizing and implementing OP included places of where students were attached, number of students attached to a livestock keeper, days of the week when students used to visit livestock keepers, criteria used for attaching students to the livestock keepers, tools used by students to deliver information to their clients and the time that students spent visiting the farmers.

About 28.75% of students at Mpwapwa were placed in Ng'ambo area; the smallest percent 1.25% were attached at Mayawile and Mwanakiyanga. Also 11.25% of students of Morogoro were placed at Boma road area. However, another small percent 1.25% of respondents from Morogoro were posted to Kihonda area. Results for other places where respondents were attached for weekly outreach programme are as shown in Table 6.

Through key informants' interview it was evident that most of the places used for attaching students were mainly those areas around or nearby the campuses for easy accessibility and making the campus felt to surrounding communities. However, livestock keepers used for outreach programme training did not have a variety of livestock to make students acquire enough knowledge on various skills related to different livestock types. These observations are similar to what was reported by Edziwa *et al.* (2012) that, students who are placed to small scale farmers who have inadequate equipment, learn very little due to lack of diversified number of activities to be performed. In the process there is poor skills and practical knowledge development, which in turn affect the efficiency of the candidate's future work.

Table 6: Percentage distribution of respondents by placements under weekly OP (n=80)

Location	Mpwapwa		Morogoro		
	n	%	n	%	
LITI/LITI Kilimo	2	2.50	LITI/LITI Kilimo	6	7.50
Ng'ambo	23	28.75	Nguzo	4	5.00
Mwanakiyanga	1	1.25	Polyester	2	2.50
Igovu	4	5.00	Boma Road	9	11.25
At the research Institute	3	3.75	Mlimani street	1	1.25
Mayawile	1	1.25	Forest	7	8.75
Kikombo	2	2.50	Rock garden	5	6.25
Vianze	2	2.50	Kihonda	1	1.25
Could not remember	2	2.50	Could not remember	5	6.25
Total	40	50.00	Total	40	50.00

Under the weekly outreach activities most respondents visited livestock keepers during Saturdays and Sundays. About 56.25% of respondents visited livestock keepers on Saturdays, whereas the 45.00 % of respondents used to visit livestock keepers on Sundays. Other days which students visited livestock keepers are as shown in Table 7. These results implied that students had ample time to learn as they used the weekend days like Saturdays for outreach work when they had no classroom activities. The weekend arrangement made them practice what they learned in class and also get room to advice livestock keepers on various livestock issues. These results conform to Community Tool Box (2013) requirements, in which it is stated that, in order to organize and implement effective outreach programme, outreach organizers should make sure that the service should include home visits at non-traditional times and during weekends. However, the results of this research indicated the fact students were attending OP even during the week days on top of the expected time during weekends (Table 7). This could be signalling the fact that some students were really committed to the needs of their farmers.

Table 7: Percentage distribution of respondents by days students visited the livestock keepers (n=80)

Days	Yes		No	
	n	%	n	%
Monday	18	22.50	62	77.50
Tuesday	19	23.75	61	76.25
Wednesday	23	28.75	57	71.25
Thursday	24	30.00	56	70.00
Friday	22	27.50	58	72.50
Saturday	45	56.25	35	43.75
Sunday	36	45.00	44	55.00

During weekly outreach activities the majority (61.25%) of respondents were attached to one livestock keeper in groups of four to six students. The results also indicated that about 2.50% of respondents were placed in groups of seven to nine students (Table 8). Detailed results on number of students attached to one livestock keeper are as indicated in Table 8. These results showed that students attached for outreach programmes were visiting livestock keepers under group arrangements.

According to Caruso and Woolley (2008) group projects help students to develop a host of skills that are increasingly important in the professional world. Group projects provide positive group experiences and contribute to student learning, retention and overall college success. Similarly, Andargie (2011), suggested that students working in small groups tend to learn more and retain what has been learnt longer than when the same content is presented in other instructional formats. They feel connected, engaged and included, and they feel more satisfied with their courses. In addition, group work provides students with more real world experience because most of them will indeed be spending much of their working lives developing projects in groups.

Table 8: Percentage distributions of respondents by number attached to one livestock keeper (n=80)

Group category	1-3		4-6		7-9		Above 9	
	n	%	n	%	n	%	n	%
Morogoro	10	12.50	27	33.75	1	1.25	2	2.50
Mpwapwa	8	10.00	22	27.50	1	1.25	9	13.75
Total	18	22.50	49	61.25	2	2.50	11	13.75

About 65.0% of respondent stated that, the main criteria used to attach students for outreach programme was to mix students from different courses and also mix by gender (Table 9). In contrast one student (1.25%) from Mpwapwa reported that the criteria used were not to mix students from different courses and also not to mix gender. However one student (1.25%) from Morogoro reported that criteria used to place students to individual livestock keeper were not known (Table 9).

Table 9: Percentage distributions of respondents by criteria used to attach students (n= 80)

Criteria used	Course and gender		Do not know		Did not mix courses		Distance to farmers	
	n	%	n	%	n	%	n	%
Morogoro	26	32.50	1	1.25	00	00	13	16.25
Mpwapwa	26	32.50	6	7.50	1	1.25	7	8.75
Total	52	65.00	7	8.75	1	1.25	20	25.00

The results also revealed that about 70.00% of the respondents did not use any tool or other methods except verbal communication. Furthermore, few of them (1.25%) were using books, leaflets, handouts and posters. Similarly, about 1.25% was using just demonstrations (Table 10). However, Dewson *et al.* (2006) noted that in order to deliver effective outreach programme, leaflets, newsletters, and posters should be used than depending on verbal communication only.

Table10: Percentage distributions of respondents by tools or methods used deliver information to livestock keepers (n=80)

Tools	Leaflets		Newspapers		Posters		Verbal Communication		Books		Leaflet and Posters		Leaflets, Handouts and Books		Demonstration	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Morogoro	8	10.00	1	1.25	0	00	27	33.75	0	00	1	1.25	2	2.50	1	1.25
Mpwapwa	7	8.75	0	00	1	1.25	29	36.25	1	1.25	2	2.50	00	00	00	00
Total	15	18.75	1	1.25	1	1.25	56	70.00	1	1.25	3	3.75	2	2.50	1	1.25

About 47.50% of Morogoro respondents visited livestock keepers after office hours and similarly 40.00% of respondents from Mpwapwa campus did the same (Table 11). The results also indicated that about 12.50% of Mpwapwa respondents visited clients during office hours and only about 8.75% of respondents from Morogoro campus did visit clients during office hours (Table 11). These results indicated the fact that most respondents from Mpwapwa visited livestock keepers after office hours while students from Morogoro visited them at any time. For the outreach to be more effective the Community Tool Box (2013) suggested to organize and implement outreach programme by including home visits at non-traditional times, especially after office working hours.

Table 11: Percentage distributions of respondents by visiting time to livestock keepers (n= 80)

Time livestock keepers were visited	Any time		On office hours		After office hours	
	n	%	n	%	n	%
Morogoro	27	33.75	7	8.75	6	7.50
Mpwapwa	5	6.25	3	3.75	32	40.00
Total	32	40.00	10	12.50	38	47.50

4.3 The practical Skills Gained by Students as a Result of Outreach Programme

The determination of practical skills gained by students during outreach programme was essential in order to find out how effective the OP was in terms of gaining practical skills in animal health and in animal production as students visited livestock keepers. Variables that were of importance with respect to the practical skills gained, were practical skills in general animal health, management of cattle, poultry, piggery and skills on pasture

management. The skills were gained through various combinations of exposure i.e. through outreach programme only, through class and outreach programme, during practical session and outreach programme and a combination of all sessions i.e. through class, practical session and outreach programme.

During the duration of outreach programme only 1.25% of respondents gained skills in carrying out pregnancy diagnosis. Further analysis indicated that through a combination of class and outreach programme about 1.25% of respondents gained skills in vaccination, taking faecal samples and skills in pregnancy diagnosis (Table 12). Through a combination of outreach, class and practical sessions, the results showed that about 56.25% of respondents gained skills in controlling pests and parasites and about 21.25% of respondents gained skills in carrying out pregnancy diagnosis (Table 12). The results revealed that more respondents gained more skills through a combination of class, practical and in outreach activities than during outreach only.

Table 12: Percentage distributions of respondents by practical skills on animal health gained by students as a result of OP

Skills	CO		PO		OP		CP		COP		POP		CPOP	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Taking pulse rate	00	0.00	3	3.75	00	0.00	38	47.50	00	0.00	00	0.00	39	48.75
Taking heart beats	00	0.00	3	3.75	00	0.00	38	47.50	00	0.00	00	0.00	39	48.75
Taking body temperature	2	2.50	3	3.75	00	0.00	31	38.75	00	0.00	00	0.00	44	55.00
Taking faecal samples	2	2.50	4	5.00	00	0.00	54	67.50	1	1.25	00	0.00	19	23.75
Collect blood samples	2	2.50	4	5.00	00	0.00	56	70.00	00	0.00	00	0.00	18	22.50
Pregnancy diagnosis	3	3.75	1	1.25	1	1.25	56	70.00	1	1.25	00	0.00	17	21.25
Collect lymph smears	3	3.75	4	5.00	00	0.00	49	61.25	00	0.00	00	0.00	21	26.25
Calculating the correct dosage	4	5.00	1	1.25	00	0.00	40	50.00	00	0.00	00	0.00	35	43.75
Prescription of drugs	3	3.75	00	0.00	00	0.00	35	43.75	00	0.00	00	0.00	40	50.00
Administering of drugs	2	2.50	00	0.00	00	0.00	35	43.75	00	0.00	00	0.00	43	53.75
Post mortem examinations	1	1.25	1	1.25	00	0.00	57	71.25	00	0.00	1	1.25	20	25.00
Disinfect equipments	4	5.00	00	00	00	0.00	35	43.75	00	0.00	00	0.00	40	50.00
Control of pest and parasites	4	5.00	1	1.25	00	0.00	30	37.50	00	0.00	00	0.00	45	56.25
Vaccination	5	6.25	2	2.50	00	0.00	41	51.25	00	0.00	1	1.25	41	51.25

Where CO= class only; PO= practical session only; OP= outreach program only; COP = class and outreach programme; POP= practical and outreach programme; CPOP = class practical and outreach programme.

With regard to practical skills on cattle management about 2.50% of the respondents gained practical skills in attending parturition cases (Table 13). Whereas skills in training calves to drink milk or artificial colostrums, hoof trimming and disbudding were gained by 1.25% of the respondents during outreach only. Further analysis showed that through a combination of class and outreach a similar number of about 1.25% gained skills in training calves to drink milk or artificial colostrums and hoof trimming (Table 13).

Moreover results showed that throughout practical and outreach sessions a similar number of respondents (1.25%) gained skills in identifying animals on heat, training calves to drink milk or artificial colostrums, hoof trimming, disbudding, dehorning and formulating rations for various classes of livestock. In addition it was found that through a combination of class, practical and outreach programmes about 43.75% of respondents gained skill in identifying animals on heat, while about 8.75% reported to be able to formulate rations for various classes of livestock (Table 13).

It is apparent that very few skills were gained by students during outreach programme only. The main opportunity where students practised or gained skills was during class and practical sessions only and in a combination of class, practical and outreach programme. The possible reasons could be that the duration of weekly outreach programme was too short and or students were placed to small scale farmers who had very few animals which resulted to students not gaining adequate skills.

Table13: Percentage distributions of respondents by practical skills on cattle management gained by students as a result of OP

Skills	CO		PO		OP		CP		COP		POP		CPOP	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Identifying animals on heat	00	0.00	1	1.25	00	0.00	43	53.75	00	0.00	1	1.25	35	43.75
Calculating expected date of parturition	9	11.25	1	1.25	00	0.00	52	65.00	00	0.00	00	0.00	19	23.75
Attending parturition cases	8	10.00	00	0.00	2	2.50	57	71.25	1	1.25	00	0.00	12	15.00
Preparing and feeding artificial colostrums	7	8.75	00	0.00	00	0.00	51	63.75	1	1.25	00	0.00	21	26.25
Training calves to drink milk or artificial colostrums	3	3.75	1	1.25	1	1.25	60	75.00	00	0.00	1	1.25	14	17.50
Hoof trimming	3	3.75	1	1.25	1	1.25	60	75.00	00	0.00	1	1.25	15	18.75
Disbudding	1	1.25	1	1.25	1	1.25	58	72.50	00	0.00	1	1.25	19	23.75
Dehorning	00	0.00	3	3.75	00	0.00	52	65.00	00	0.00	1	1.25	24	30.00
Close castration	00	0.00	1	1.25	00	0.00	60	75.00	00	0.00	00	0.00	18	22.50
Formulating rations for various classes of livestock	8	10.00	00	0.00	00	0.00	63	78.75	00	0.00	1	1.25	7	8.75
Designing and constructing animal housing	5	6.25	3	3.75	00	0.00	55	68.75	00	0.00	00	0.00	17	21.25
Repairing animal house	6	7.50	3	3.75	00	0.00	46	57.50	00	0.00	00	0.00	25	31.25
Determination of age	1	1.25	3	3.75	00	0.00	44	55.00	00	0.00	00	0.00	32	40.00

The practical skills on poultry management gained by respondents in outreach programme only included about 11.25% of respondents who gained skills in identifying layers and non layers while 2.50% of respondents gained skills in repairing chicken houses (Table 14). The results further indicated that through a combination of outreach and practical sessions, about 7.50% respondents gained skills in formulating rations for various classes of chicken, while about 1.25% of respondents gained skills in vaccination of chicks and older birds, and identifying layers and non layers. In addition the results showed that through a combination of class, practical and outreach about 37.50% of respondents gained skills in vaccination of chicks and older birds while about 16.25% gained skills in formulating rations for various classes of chicken (Table 14).

These results indicated the fact that very few skills were gained by students during weekly outreach programme. This could be due to the nature of livestock keepers where students were placed having less number of animals for students to practice on, or they did not trust services from students and hence were not allowed to attend their animals.

Table 14: Practical skills on poultry management gained by students as a result of outreach programme

Skills	CO		PO		OP		CP		COP		POP		CPOP	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Prepare brooder for chicks	10	12.50	00	00	00	0.00	54	67.50	00	0.00	00	0.00	15	18.75
Vaccination of chicks and older birds	2	2.50	7	8.75	00	0.00	37	46.25	1	1.25	1	1.25	30	37.50
Identifying layers and non layers	2	2.50	00	0.00	9	11.25	46	57.50	1	1.25	1	1.25	21	26.25
Designing and constructing chicken housing	3	3.75	00	0.00	00	0.00	61	76.25	00	0.00	1	1.25	14	17.50
Repairing chicken house	2	2.50	00	0.00	2	2.50	49	61.25	7	8.75	00	0.00	18	22.50
Formulating rations for various classes of chicken	5	6.25	00	0.00	00	0.00	53	66.25	00	0.00	6	7.50	13	16.25
Debeaking	4	5.00	3	3.75	00	0.00	31	38.75	00	0.00	1	1.25	40	50.00

The results showed that no respondent gained any skill on management of pigs during outreach programme only (Table 15). The results further indicated that in a combination of outreach and practical sessions about 10.00 % of the respondents gained skill in pigs' vaccination, while about 1.25% of respondents gained the skills in calculating expected date of farrowing. Whereas through a combination of class, practical and outreach programme about 31.25% of respondents gained skill in deworming, about 5.00 % gained skills in preparing and feeding artificial colostrums to piglets (Table 15).

Table 15: Percentage distributions of respondents by practical skills on management of pigs gained by students as a result of outreach programme

Skills	CO		PO		OP		CP		COP		POP		CPOP	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Open castration	9	11.25	00	0.00	00	0.00	55	68.80	00	0.00	00	0.00	16	20.00
Teeth clipping	2	2.50	9	11.25	00	0.00	57	71.20	00	0.00	00	0.00	12	15.00
Deworming	1	1.25	54	67.50	00	0.00	00	0.00	00	0.00	00	0.00	25	31.25
Vaccination	5	6.25	1	1.25	00	0.00	58	72.50	8	10.00	00	0.00	8	10.00
Identify sow on heat	00	0.00	00	0.00	00	0.00	57	71.25	00	0.00	9	11.25	14	17.50
Calculating expected date of farrowing	2	2.50	00	0.00	00	0.00	56	70.00	1	1.25	00	0.00	21	26.25
Attending farrowing cases	12	15.00	1	1.25	00	0.00	58	72.50	00	0.00	00	0.00	9	11.25
Preparing artificial colostrums	11	13.75	2	2.50	00	0.00	63	78.80	00	0.00	00	0.00	4	5.00

Under pasture management about 10.00% of respondents gained skills in applying manure and fertilizer in pasture plots during outreach programme only (Table 16). However, during a combination of outreach and class sessions about 10.00% of respondents gained skills in hay making. Through a combination of practical and outreach programme the results showed that about 12.50% respondents gained skills in conservations of pasture into silage. Through a combination of practical, class and outreach programme about 5.00% of respondents reported that they gained skills in seed bed preparation while about 1.25% of respondents gained skills in processing of pasture seeds.

Table16: Percentage distributions of respondents by practical skills on pasture management gained by students as a result of outreach programme

Skills	CO		PO		OP		CP		COP		POP		CPOP	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Seed bed preparation	10	12.50	1	1.25	00	0.00	65	81.25	00	0.00	00	0.00	4	5.00
Planting of pasture	2	2.50	9	11.25	00	0.00	66	82.50	00	0.00	00	0.00	3	3.75
Applying manure and fertilizer	2	2.50	2	2.50	8	10.00	65	81.25	00	0.00	00	0.00	3	3.75
Harvesting and processing seeds	8	10.00	2	2.50	00	0.00	69	86.25	00	0.00	00	0.00	1	1.25
Conservations of pasture into hay	9	11.25	00	0.00	00	0.00	61	76.20	8	10.00	00	0.00	2	2.50
Conservations of pasture into silage	18	22.50	00	0.00	00	0.00	51	63.75	00	0.00	10	12.50	1	1.25

The results from Tables 12, 13, 14, 15, and 16 indicated the fact that students gained very little practical skills through outreach programme only. However, Ayarkwa *et al.* (2012) noted that experiential learning is not for students to be taught new skills instead, it only provides opportunities for students to apply what they have learnt in college or institute and also it provides real-life job experience, making them more ready for employment.

On the other hand Cort *et al.* (2004) noted that some skills are therefore best developed at a work place once one is employed as technologies keep changing almost on a daily basis, making it difficult for institutions to acquire all necessary machines and equipment required for training their students. Provision of attachments which is an experiential training like outreach programme with LITA, allows trainees to improve their skills and knowledge in their trades, exposes them to new methods/technologies and materials, gives them a realistic and holistic impression of their profession and brings elements of realism into their training.

4.4 Competences of Students in Providing Knowledge and Skills as a Result of Outreach Activities

A paired-samples t-test was conducted to compare level of competence attained by students in providing knowledge and skills to livestock keepers on livestock extension cross cutting issues before and after outreach activities. The results found that they were no significant difference in competence in providing knowledge on what to produce and providing knowledge on how to prepare financial plans ($p>0.05$) (Table 17). More results showed that there were significant differences ($p<0.05$) in change from not competent to competent on the remaining seven skills which are providing knowledge on what to produce, providing knowledge on when to produce, providing knowledge on when to sell, providing knowledge on how to prepare business plan, providing knowledge on how HIV

/AIDS is transmitted, providing knowledge on how to control HIV /AIDS and providing knowledge on effects of AIDS on individual health and community (Table 17).

The results indicated that levels of competencies of students changed from less competent to competent in seven out of nine skills on providing knowledge to livestock keepers pertaining to livestock extension cross cutting issues. These results are in conformity with those of Oloruntoba (2008) who noted that the farm practical year which is an experiential learning like weekly outreach by LITA improved students competencies in many agricultural skills.

4.5 The Influence of the Outreach Programme on Career Development

On the influence of the outreach programme on career development students strongly agreed with four highest rated statements that Outreach Programme helps students to work effectively with other students (65.00%), helps students to think independently and formulate their own ideas (61.25%), helps students to communicate more effectively and professionally with livestock keepers (61.25%) and helps students to develop their own ideas and programme of work (60.00%) (Table18). Detailed results on the influence of the outreach programme on career development by respondents are shown in Table 18.

Table 17: Paired t-test showing competencies of students in providing knowledge and skills to livestock keepers on livestock extension cross cutting issues (n=80)

		mean	Sd	t	df	sig.
Skills						
On what to produce	Before	1.74	.706	7.638	79	.000
	After	2.32				
On how to produce	Before	1.69	.766	8.131	79	.110
	After	2.40				
On when to produce	Before	1.64	.733	7.775	79	.007
	After	2.28				
On when to sell	Before	1.64	.731	8.131	79	.003
	After	2.29				
On how to prepare financial plan	Before	1.60	.763	7.955	79	.052
	After	2.32				
On how to prepare business plan	Before	1.65	.716	7.638	79	.001
	After	2.29				
Knowledge						
On how HIV /AIDS is transmitted	Before	1.64	.671	6.130	79	.000
	After	2.15				
On how to control HIV /AIDS	Before	1.70	.700	6.443	79	.000
	After	2.24				
On effects of AIDS on individual health and community	Before	1.69	.707	6.766	79	.000
	After	2.22				

Sd – standard deviation; t –t test ratio; df- degree of freedom

These results implied that these LITA graduates acquire relevant employment skills that are currently essential. These skills which are important entry point for employment include thinking independently, working effectively with others, formulating their own ideas and communicating effectively and professionally.

Table18: Influence of outreach programme in abilities and career impact

Statement on influence of OP			Morogoro		Mpwapwa		Total	
			n	%	n	%	n	%
Students work effectively with other students	Strongly agree	24	30	28	35.00	52	65.00	
	Agree	15	18.75	12	15.00	27	33.75	
	Disagree	1	1.25	0	0.00	1	1.25	
	Strongly disagree	00	0.00	0	0.00	0	0.00	
Students to organize and lead others Students	Strongly agree	14	17.50	15	18.75	29	36.25	
	Agree	22	27.50	22	27.50	44	55.00	
	Disagree	4	5.00	2	2.50	6	7.50	
Students to develop their own ideas and program of work	Strongly disagree	00	0.00	1	1.25	1	1.25	
	Strongly agree	20	25.00	28	35.00	48	60.00	
	Agree	17	21.25	12	15.00	29	36.25	
Students to work independently	Disagree	3	3.75	0	0.00	3	3.75	
	Strongly disagree	00	0.00	0	0.00	00	0.00	
	Strongly agree	20	25.00	24	30.00	44	55.00	
	Agree	17	21.25	13	16.25	30	38.00	
Students to have self confidence	Disagree	3	3.75	2	2.50	5	6.25	
	Strongly disagree	00	0.00	1	1.25	1	1.25	
	Strongly agree	15	18.75	12	15.00	27	33.75	
	Agree	25	31.25	28	35.00	53	66.25	
Students prioritize problems	Disagree	00	0.00	0	0.00	0	0.00	
	Strongly disagree	00	0.00	0	0.00	0	0.00	
	Strongly agree	18	22.50	25	31.25	43	53.75	
	Agree	17	21.25	13	16.25	30	37.50	
Students apply the basic concepts of their discipline of extension worker	Disagree	4	5.00	1	1.25	5	6.25	
	Strongly disagree	1	1.25	00	0.00	1	1.25	
	Strongly agree	20	25.00	24	30.00	44	55.75	
	Agree	17	21.25	15	18.75	32	40.00	
Students apply the basic methods of their discipline to work	Disagree	2	2.50	00	0.00	2	2.50	
	Strongly disagree	1	1.25	1	1.25	1	1.25	
	Strongly agree	22	27.50	24	30.00	46	57.50	
	Agree	16	20.00	15	18.75	31	38.75	
Students think independently and formulate their own ideas	Disagree	1	1.25	1	1.25	2	2.50	
	Strongly disagree	1	1.25	00	0.00	1	1.25	
	Strongly agree	21	26.25	28	35.00	49	61.25	
	Agree	16	20.00	12	15.00	28	35.00	
Students communicate more effectively and professionally with livestock keepers	Disagree	3	3.75	00	0.00	3	3.75	
	Strongly disagree	00	0.00	00	0.00	0	0.00	
	Strongly agree	20	25.00	29	36.25	49	61.25	
	Agree	17	21.25	10	12.50	27	33.75	
Students communicate more effectively and professionally with co-workers	Disagree	3	3.75	1	1.25	4	5.00	
	Strongly disagree	0	0.00	0	0.00	0	0.00	
	Strongly agree	20	25.00	20	25.00	40	50.00	
	Agree	15	18.75	19	23.75	34	42.50	
Students work with others who hold different views	Disagree	4	5.00	1	1.25	5	6.25	
	Strongly disagree	1	1.25	0	0.00	1	1.25	
	Strongly agree	15	18.75	21	26.25	36	45.00	
	Agree	24	30.00	18	22.50	42	52.50	
	Disagree	1	1.25	1	1.25	2	2.50	
	Strongly disagree	0	0.00	0	0.00	0	0.00	

Opinions of students on contribution of the weekly outreach programme activities on exposure of students to real work of livestock extension showed that about 27.50% of respondents acknowledged the fact that OP facilitated students to interact with farmers and in turn gain knowledge on various livestock issues (Table 19). In addition about 25.00% of

respondents noted that the programme assisted in imparting skills which are useful to students for future work environment. Furthermore, about 3.75% of respondents explained that through weekly outreach activities students got the opportunity to practice what they were taught in class into the real world of work (Table 19).

The results from this study are contrary with findings of Matamande *et al.* (2013) who reported that during farm attachment as experiential learning, students who were placed to small scale farmers expressed that they were treated as cheap labour and were assigned unprofessional or ordinary tasks. A similar situation was also reported by Ayarkwa *et al.* (2012) and Matamande *et al.* (2013). Matamande *et al.* (2013) further elaborated that industrial attachment as an experiential learning similar to outreach programme by LITA, helped students to have an appreciation of the real world, to apply theory to practice from the hands-on training and the student learnt about skills required as well as work ethics.

Table19: Percentage distributions of respondents by contribution of the weekly OP activities on exposure of students on real work of livestock extension workers

Opinions	Morogoro		Mpwapwa		Total	
	n	%	n	%	n	%
Make students interact with farmers, get knowledge on various livestock issues	11	13.75	11	13.75	22	27.50
Impart skills useful to students future work environment	7	8.75	13	16.25	20	25.00
Build confidence in extension activities to students	8	10.00	4	5.00	12	15.00
Does not expose to real work, some farmers don't trust in student services	4	5.00	5	6.25	9	11.25
It exposes students although there are some challenges	6	7.50	7	8.75	13	16.25
Students get the opportunity to practice what they were being taught	3	3.75	0	00	3	3.75
Do not have any opinion	1	1.25	0	00	1	1.25
Total	40	50.00	40	50.00	80	100.00

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Weekly outreach programme is essential in that it links training and the world of work, it provided students with hands-on experience and opportunity to apply theory learnt in classroom to a real-life field situation in which students had to adapt and solve problems. Basing on the findings from this study it can be concluded that students trained by LITA Morogoro and Mpwapwa campuses visited livestock keepers on weekends especially on Saturdays after office hours. They visited one livestock keeper in groups of four to six students. During the visit these students mainly used verbal communication to deliver information to livestock keepers.

It is evident that during weekly outreach programme, students gained or practiced very few skills in animal health and animal production due to unavailability of scheduled skills for students to learn or to practice on or livestock keepers never trusted students to practice with their very expensive and valuable animals.

On other hand weekly outreach programme assisted in changing levels of competencies of students from not being competent to being competent in providing knowledge and skills to livestock keepers on various livestock extension cross cutting issues. It also helped students to develop self confidence, work effectively with other students, think independently and formulate their own ideas and communicate more effectively and professionally with livestock keepers.

Despite the fact that few skills on animal health and animal production were gained during weekly outreach programme, students were exposed to the real work of livestock extension activities. Students interacted with livestock keepers and in the process gained skills useful to students' future working environment and it built their confidence in doing extension activities.

Although Mpwapwa campus was the first to be established and to start outreach programme and also despite Morogoro offering Diploma in Range Management and Tsetse control, most of the findings showed that there were no statistical significant differences between the outcomes of Mpwapwa and Morogoro campuses in their OP implementation. Generally, though to a lesser extent, the outreach programme assisted in imparting skills which are useful to students for future work environment.

5.2 Recommendations

Based on the results and conclusions, the following recommendations are made:

- (i) Livestock keepers where students would be attached for outreach programme should be chosen based on the number and type of livestock they own in order to provide a better practicing experience.
- (ii) Students should be advised and encouraged to use a combination of extension methods and aids like posters and leaflets to reinforce their messages to livestock keepers.
- (iii) Students should be visited regularly by tutors during weekly outreach activities in order to ensure that they get the necessary exposure as well as boost their morale.

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APPENDICES

Appendix1: Students Interview Schedule

Name of respondent (Optional) _____

1. What is your age? _____
2. Sex _____
3. Which course/programme did you pursue with LITA? _____
4. Which LITA campus did you graduate from? (tick in appropriate place)

LITA campus	
Morogoro	
Mpwapwa	

5. In which year did you graduate? _____
6. What are you doing after graduation? (tick in appropriate place)
 - a) Unemployed ()
 - b) Self employment ()
 - c) Employed by government ()
 - d) Employed by private sector ()
 - e) Other source of employment (please specify)_____
7. What types of livestock were kept by Livestock keepers you visited during weekly outreach programme? (tick in either YES or NO)

Types of livestock	Yes	No
Dairy cattle		
Beef cattle		
Layers		
Broilers		
Local chicken		
Pigs		
Other types(please specify)		

8. Which village(s) /community(s) did you go for outreach activities?

9. How many of you (students) were attached to livestock keeper?

10. What is your suggestion on the number of students to be attached per individual livestock keeper? (tick in appropriate place)
 - a) One student per livestock keeper ()
 - b) Two students per livestock keepers ()
 - c) Three students per livestock keepers ()

d) More than three students per livestock keepers

11. What were the criteria for attaching students to livestock keepers?

12. In which day of the week you were required to visit livestock keepers for weekly outreach activities? (Tick in appropriate place)

Days	Yes	No
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

13. At what time you were visiting livestock keepers? (tick in appropriate place)

- a) Any time
- b) During office hours
- c) After office hours

14. Which tools you were using to deliver information to livestock keepers?

- a) Leaflets
- b) Newsletters
- c) Posters
- d) Others (please specify) _____

15. Which practical skills on animal health have you gained before and during outreach programme? (tick in appropriate place)

Skills	In class	During practical sessions	During outreach programme
Taking pulse rate			
Taking heart beats			
Taking body temperature			
Taking faecal samples for diagnosis of diseases			
Collect blood samples for diagnosis of diseases			
Carry out pregnancy diagnosis			
Collect lymph smears for laboratory diagnosis of diseases			
Calculating the correct dosage required to treat different diseases and conditions in domestic animals			
Prescription of drugs			
Administering of drugs using various routes			
Post mortem examinations			
Disinfect equipments by using appropriate disinfectant			
Control of pest and parasites			
Vaccination			

16. Which practical skills on animal production you have gained before and during outreach programme? (tick in appropriate place)

Skills	in class	during practical	during outreach
---------------	-----------------	-------------------------	------------------------

	sessions	programme
Skills on Cattle management		
Identifying animals on heat		
Calculating expected date of parturition		
Attending parturition cases		
Preparing and feeding artificial colostrums		
Training calves to drink milk or artificial colostrums		
Hoof trimming		
Disbudding		
Dehorning		
Close castration		
Formulating rations for various classes of livestock		
Designing and constructing animal housing		
Repairing animal house		
Determination of age		
Skills on poultry management		
Prepare brooder for chicks		
Vaccination of chicks and older birds		
Identifying layers and non layers		
Designing and constructing chicken housing		
Repairing chicken house		
Formulating rations for various classes of chicken		
Debeaking		
Skills on management of pigs		
Open method of castration		
Teeth clipping		
Ironing injection		
Deworming		
Vaccination		
Identifying sow on heat		
Calculating expected date of farrowing		
Attending farrowing cases		
Preparing and feeding artificial colostrums for piglets		
Skills on pasture management		
Seed bed preparation		
Planting of pasture		
Applying manure and fertilizer in pasture plants		
Harvesting and processing of pasture seeds		
Conservations of pasture into hay		
Conservations of pasture into silage		

17. In which levels of competence have you gained in providing knowledge and skills before and after outreach programme on the following livestock extension cross cutting issues? (tick in appropriate place)

Knowledge and skills	Before outreach			After outreach		
	Very competent	Competent	Not Competent	Very competent	Competent	Not Competent
Issues related to agribusiness						
Providing knowledge on what to produce						
Providing knowledge on how to produce						
Providing knowledge on when to produce						
Providing knowledge on when to sell						
Providing knowledge on how to prepare financial plan						
Providing knowledge on how to prepare business plan						
Issues related to HIV/AIDS						
Providing knowledge on how HIV/AIDS is transmitted						
Providing knowledge on how to control HIV/AIDS						
Providing knowledge on effects of AIDS on individual health and community						

18. Because of weekly outreach programme I am better able to do the following for my career development.

Statement	Strong agree	Agree	Disagre e	Strongl y disagre e
i. It helps me to work effectively with other Students				
ii. It helps me to organize and lead others Students				
iii. It helps me to develop my own ideas and program of work				
iv. It helps me to work independently				
v. It helps me to have self-confidence				
vi. It helps me to priorities problems				
vii. It helps me to apply the basic concepts of my discipline of livestock extension worker				
iii. It helps me to apply the basic methods of my discipline to work				
ix. It helps me think independently and formulate my own idea				
x. It helps me communicate more effectively and professionally with livestock keepers				
xi. It helps me communicate more effectively and professionally with co-worker				
xii. It helps me to work with others who hold different views				
iii. Other influences of outreach programme on the career development (please specify)				

19. What would be your opinion on the statement that weekly outreach activities provided by students trained at LITA fills the gap of extension work provided by government extension workers (Agree: Disagree)

20. Give explanation for the choice you have made in the question 19 above

21. What is your opinion on contribution of weekly outreach activities on exposure of students on real work of livestock extension workers?

22. Please select statement that best describe your opinions on contribution of LITAs weekly outreach activities on employability's skills (tick in appropriate place)

- a) It doesn't contribute to my career and fulfil my responsibilities
- b) It contributed to my career and fulfil my responsibilities

23. What advice would you consider giving to other students who are participating in implementing weekly outreach activities?

24. What advice would you consider giving to LITA Tutors who organize and monitor weekly outreach activities?

THANK YOU FOR YOUR CONTRIBUTION

Appendix 2: Checklist for Key Informants

1) Name (optional)

2) Name of LITA campus (Tick in appropriate place)

LITA campus	
Morogoro	
Mpwapwa	

3) What is your highest level of education?

- a) Diploma ()
- b) First degree ()
- c) Masters ()
- d) PhD ()

4) What is your area of specialization?

5) How many years have you worked as livestock tutor?

6) How many years have you worked as outreach organizer?

7) Which villages or communities do students usually go for weekly outreach programm?_____

8) What were the reasons for selecting the village or community you have listed in the above question?

9) How were livestock keepers selected for outreach programme?

- a) By self volunteering ()
- b) Selected by village/community leader ()
- c) Selected by Tutors ()
- d) Selected by extension workers ()

10) What were the criteria for selecting livestock keepers to be visited by students during weekly outreach activities?

11) What is the procedure for attaching students to individual livestock keepers?

12) How many students were attached per each livestock keeper?

13) What were the criteria for attaching students to individual livestock keepers?

14) Were farmer's needs identified before placing students for weekly outreach activities?
YES ___ NO ___ (Please explain the reasons for or is for not)

15) In which day /days were students required to visit livestock keepers during weekly outreach activities?

16) At what time were the students expected to visit livestock keepers?

- a) Any time ()
- b) During official hours ()
- c) After official hours ()

17) How do you monitor students when are implementing outreach activities?

18) How are the students' performances evaluated?

19) What is your opinion on the statement that weekly outreach activities contribute to expose students on real work of livestock extension workers (Agree: Disagree)

20) Give explanation for the choice you have made in the question 19 above

21) Please select statement that best describe your opinions on contribution of LITAs weekly outreach activities on employability's skills to students ;(tick in appropriate place)

- a) It doesn't contribute to the students career development ()
- b) It contributed to the students career development ()

22) What advice would you consider giving to the following individuals who are participating in organizing, monitoring and implementing weekly outreach activities?

i. LITA students-

ii. LITA tutors

iii. LITA chief executive officer

THANK YOU FOR YOUR CONTRIBUTION