Development of Literacy Programs for Adult in North Kordofan Rural areas

Nafisa, A., Hassan

Assistant Professor /Faculty of Computer Science and Information Technology University of West Kurdofan/ Sudan.
nafisaabdou@gmail.com

Abstract: *The paper will based on a project designed to combat illiteracy among women in rural areas through the use of technology. The project was carried in an administrative district called Sudary in Hamrat ALSheikh in North Kurdofan. Illiteracy rate is very high among women of the area and the project provided literacy curricula through the use of technology with the aim of eliminating illiteracy. Although the project faced many challenges but the use of technology had a very positive impact in empowering women through eliminating illiteracy in the area. The paper will talk about the technology used, integration of curricula, impact of technology use in the motivation of the learners, challenges facing the project and impact of the technology – based solutions on illiteracy in rural areas.*

Keywords: eLearning technologies, literacy and adult education, rural area.

1. Introduction

Literacy has many definitions and thus there are no universal definitions and standards of literacy. Unless otherwise specified, all rates are based on the most common definition - the ability to read and write at a specified age. Different countries use different standards to assess the ability to read. According to the World Bank Indicator for literacy 53.517 of the percentage of the population above the age of 15 and above "Adult literacy rate is the percentage of people ages 15 and above who can both read and write with understanding a short simple statement about their everyday life [1][2]. Sudan has one of the highest illiteracy rates among adults in Africa. Women represent a very high   rate   among the total population and rural women represent even a higher rate than urban women. According to the Knoema Website the total rate of illiterate adults in Sudan is 58.6% of the total population in 2015. [3]

Information on literacy, while not a perfect measure of educational results, is probably the most easily available and valid for international comparisons. Low levels of literacy, and education in general, can impede the economic development of a country in the current rapidly changing, technology-driven world [4]. Literacy skills are essential life skills Literacy rate is an outcome indicator to evaluate educational attainment. This data can predict the quality of future labor force and can be used in ensuring policies for life skills for men and women. It can be also used as a proxy instrument to see the effectiveness of education system; a high literacy rate suggests the capacity of an education system to provide a large population with opportunities to acquire literacy skills. The accumulated achievement of education is fundamental for further intellectual growth and social and economic development, although it doesn't necessarily ensure the quality of education. Literate women implies that they can seek and use information for the betterment of the health, nutrition and education of their household members. Literate women are also empowered to play a meaningful role.

2. Background

The study is based on a piloting project aiming to fight illiteracy in rural areas among adult women using technology. It is hoped from this piloting projects many lesson will be learned that will lead to a better improvement for the main project. The project was carried in an administrative district called Sudary in Hamrat AL-Sheikh in North Kurdofan. Illiteracy rate is very high among women of the area and the project provided literacy curricula through the use of technology with the aim of eliminating illiteracy.

3. Aim of the Study

The study is to investigate the impact of the training programme carried with potential teachers of the literacy programme at Hamrat Al-Sheikh on the use of an illiteracy software programmes designed to combat illiteracy among women in rural areas. The project was carried in an administrative district called Sudary in Hamrat Al-Sheikh in North Kurdofan.

4. Statement of the Problem

Illiteracy rate is very high among women of rural areas in Sudan. In North Kurdofan the rate is very high. The rural women in these areas needed to improve their families living conditions by being able to be involved in extra earning activities outside their homes. The enable these women to improve their living conditions they needed to acquire basic literacy and numeracy skills to be able to perform basic operations. It is hoped that through the use of technology women can be empowered and enabled to improve

their income. To be able to run the project a number of teacher had to be trained on the use of the software and associated programmes and enable them to become facilitators. The target was to train them in using an Arabic and math programmes.

5. Questions of the study

The study attempts to answer several questions. The questions are:

a. What is impact of the training on the targeted facilitators?
b. What are the challenges that faced the facilitators during the training?
c. What is the facilitators' evaluation of the training course?

6. Theoretical framework

Technology Enhanced-learning

The process of learning in formal education no longer takes place solely in traditional, educator-centric settings. Interactive, learner- centric experiences are being used to support learner collaboration, knowledge acquisition and reflection. Learner enquiry,   activity and engagement are key requirements in such experiences and TEL applications are being designed and utilized to meet these requirements [5]. TEL practices cater to students and teachers who use many different learning tools and environments and have experience of interaction derived with open, ubiquitous, and socially-oriented services. TEL is becoming well established in many educational environments, most notably in blended or hybrid learning scenarios, which blend TEL and traditional approaches to teaching and learning. TEL is expected to make a radical difference to education, specifically, the quality and effectiveness of the learning experience with one of its key contributions being 'personalized learning'. TEL methods have been known to change the deployment of the most important resource in the education system: teachers 'and the learners' time. Learning content should be reusable and accessible to everyone (with the author and originating institutions permission); however knowledge about individual learners should certainly not be accessible to everyone. Major benefits of TEL identified in literature range from cost savings to performance and strategic benefits. In most cases learners using these technologies are able to receive instant and personalized feedback, active engagement, reusable learning materials and a safe environment where one can learn from one's mistakes and be able to access huge amounts of beneficial material on-demand. These technologies make learning more flexible in terms of time, space and place [6].
One of the main goals of the TEL development in this project is to enable the adult rural women to read and write and learn basic numerical operations through the use of technology using a designed Arabic and Math programme.

7. The Project

The project is made up of two phases the first phase was the training of the facilitators on the software programme that will be used as a tool to teach a group of 25 rural women. In the piloting the researcher trained 10 university graduates in a progamme called Illiteracy Programme in Arabic, math and Islamic studies. The computer programme was developed by programmers in Sudan Open University. The researcher got a permission to use this software in her project. The training of the facilitators was around 15 hours. All the participants were computer literate and university graduates. They were trained in navigation techniques, teaching methods and the use of technology in teaching. The trainers were also given lectures on how to plan lesson and design activities for learning. All the trainers were already registered with the locality to do their Compulsory National Service as teachers. They were to start very soon their teaching. After the end of training the participants were given a questionnaire to evaluate the impact of the training on their skills as illiteracy teachers.

8. The study

To answer the questions of the study a questionnaire was designed to investigate the impact of the training on the facilitators and understand their views on the training they received. The population of the study were the 10 facilitators who attended the training. The questionnaire was distributed at the end of the training and the participants were requested to return it after 2 days after the end of training. The data collected through the questionnaire was analyzed using a Excel programme. The questionnaire was divided into three sections. Section one was the personal profile of the trainee, section two investigated the training module content and delivery and section three investigated the expected challenges that might face the trainee when they start the project.

9. Analysis and Discussion

 After analyzing the data the results were tabulated and presented for discussions.

Section one

Distribution of the Study variables:

To understand the profile of the participants a number of variables were investigated. The first was variable was the gender of the participants. The results showed that all the participants in the programme were females. The results are shown in table and figure (1) below.

Table (1) Gender

	Frequency	Percent
Female	10	100%
Male	0	0%
Total	**10**	**100%**

Source: Preparation of the researcher, based on the questionnaire data, 2019.

Figure (1) Gender
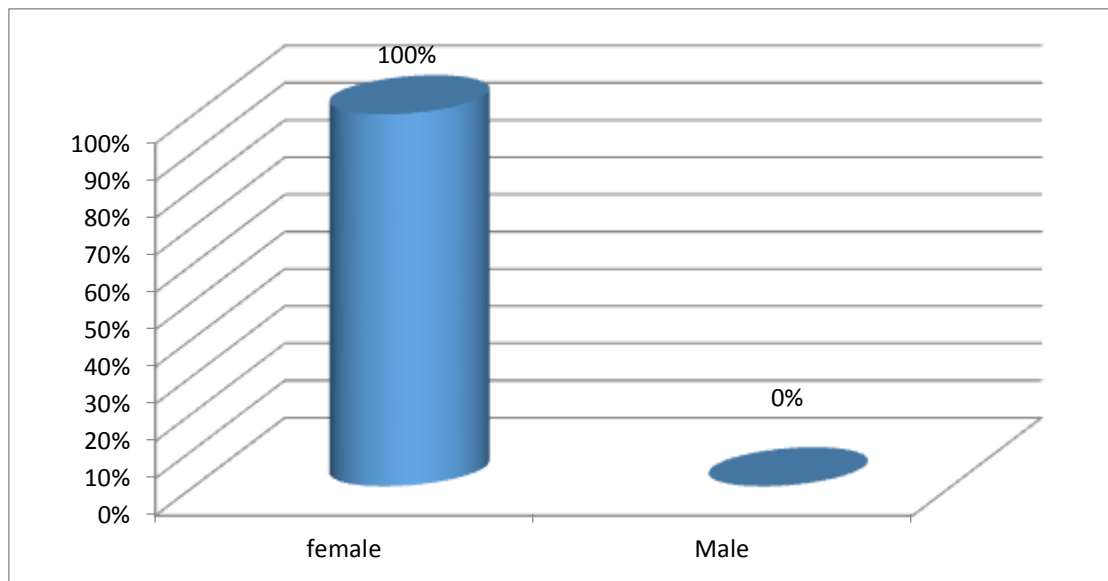
Table and figure (2) below show that (80.0%) of the sample members are between 20 and 30 years old , and (20.0%) are between (31-40) years, most of the sample age ranged from 20 to 30 years old.

Table (2) Age of participants

	Frequency	Percent
20-30 years	8	80.0%
31-40 years	2	20.0%
total	**10**	**100%**

Source: Preparation of the researcher, based on the questionnaire data, 2019.

**Figure (2) Age of participants**
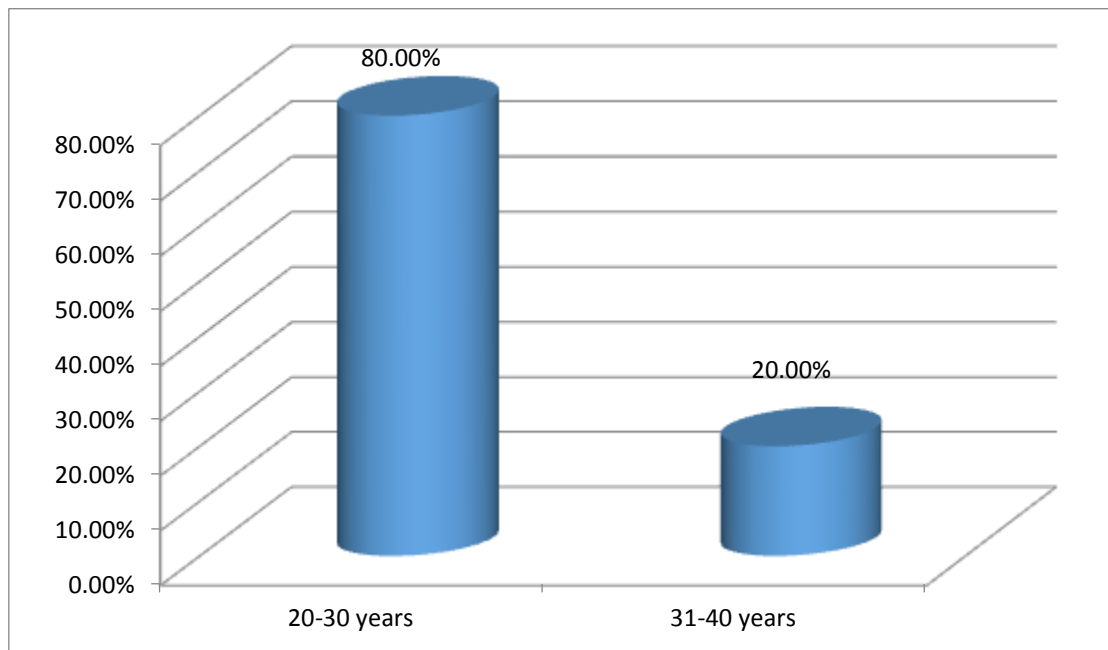
The participants were all fresh university graduate who were listed to do their National Service as teachers in their locality. The results are shown in table and figure (3) below.

Table (3) Qualifications

Qualifications	Frequency	Percentage
university graduate	10	100%
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019.

Figure (3) Qualifications
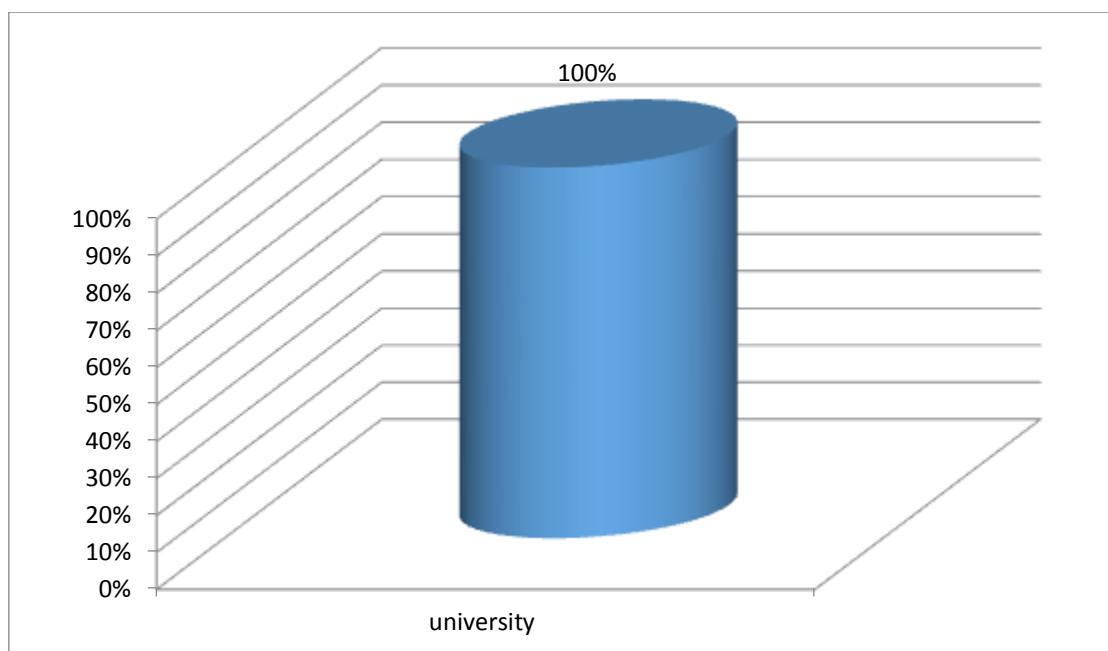
The second part of the questionnaire investigated if the participants had a background knowledge in illiteracy training or had any prior teaching experience in teaching literacy programmes. The results showed that none of the participants had any training or previous experience in teaching in illiteracy programmes. The results are shown in table and figure 4 below.

Table (4) Literacy training

Qualifications	Frequency	Percentage
not found	10	100%
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019

**Figure (4) Literacy training**
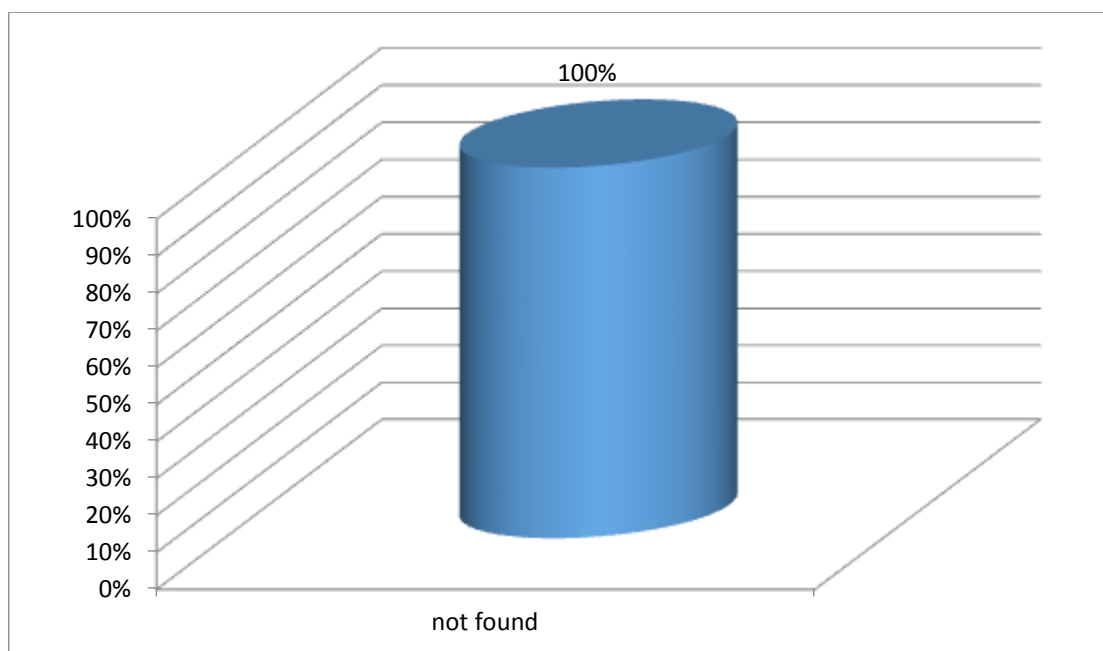
Section Two

To investigate the quality of the training programme a number of questions were posed. The first question asked if the content of the training programme. The results showed that none of the participants said that the content was poor, 40% said it was very good and 60% said it was excellent. The results are shown in table and figure (5).

Table (5). Content of training programme

	Frequency	Percentage
v.good	**6**	**60.0%**
excellent	**4**	**40.0%**
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019

### Figure (5). Content of training programme
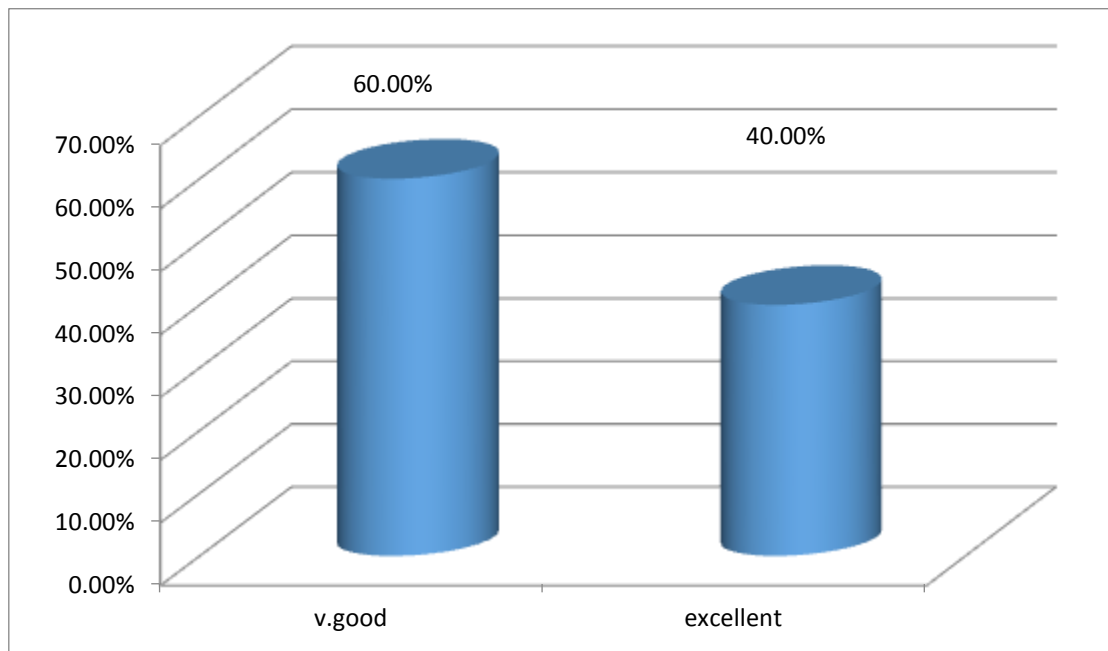
The second questions asked the participants about the training environment. None of them rated the environment as poor, while 60% rated it as very good and 40% rated it as excellent. The results are shown in table and figure (6) below.

Table (6) How appropriate is the training environment

	Frequency	Percentage
v.good	**6**	**60.0%**
excellent	**4**	**40.0%**
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019

Figure (6) How appropriate is the training environment
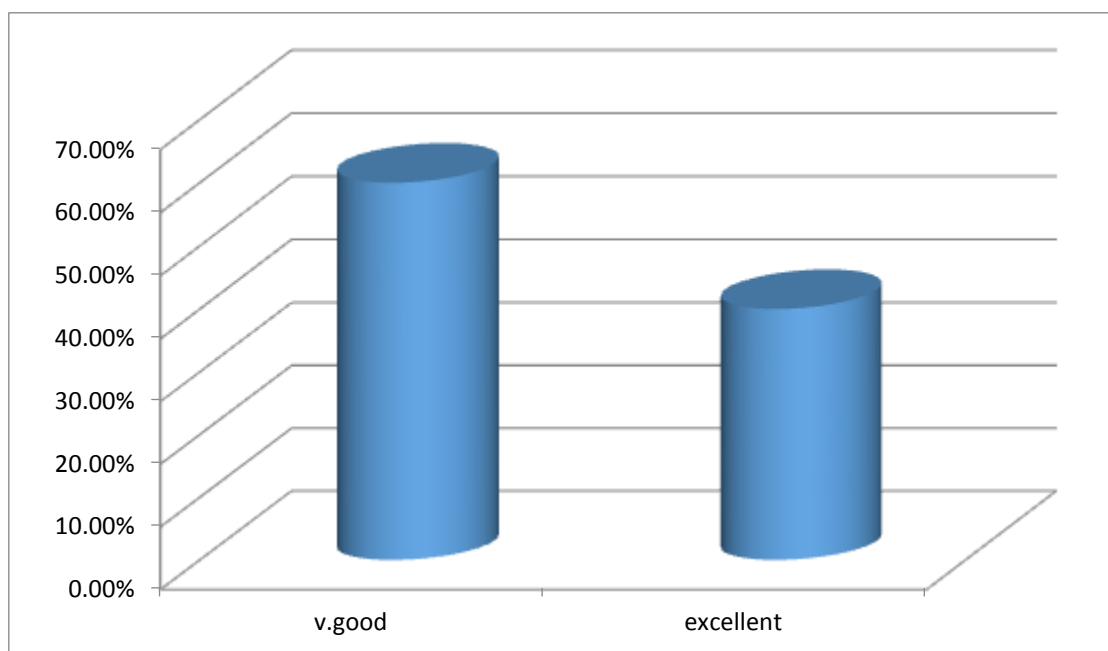
To understand the participant perceptions on the training material and content of the training module, they were asked about the content of the course and if it is sufficient for their needs. Table and figure (7) below show percentage is 40.0% and 60.0%, which is in v. good and excellent respectively, this indicate that the content is sufficient with excellent. None answered with 'poor'.

Table (8) Quality of content and training material

	Frequency	**Percentage**
v.good	**4**	**40.0%**
excellent	**6**	**60.0%**
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019

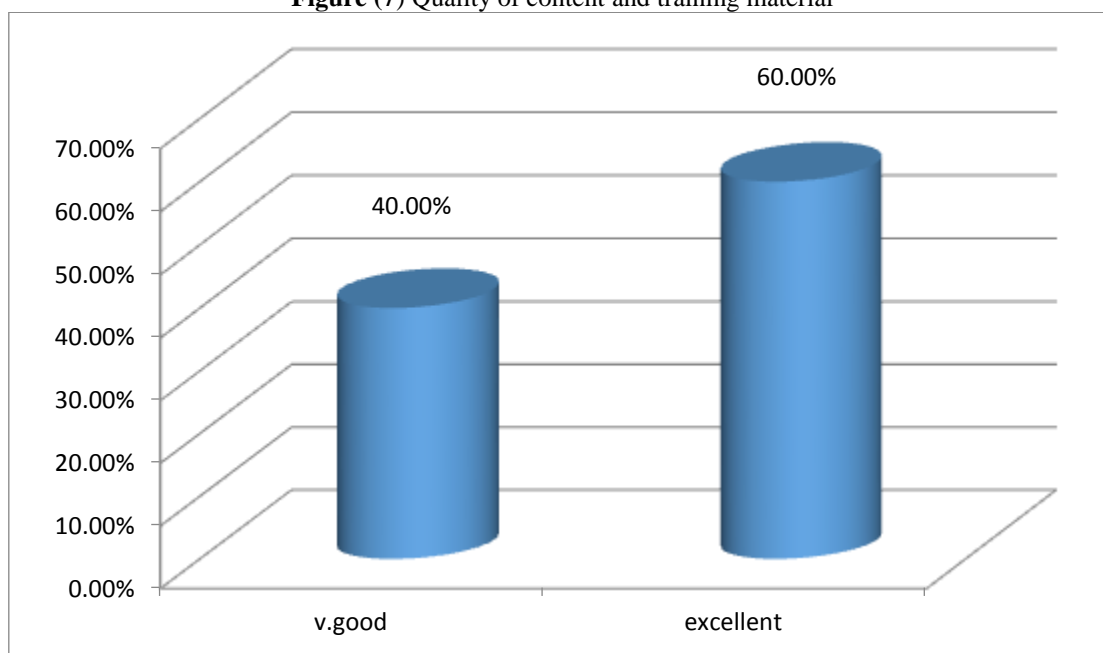**Figure (7**) Quality of content and training material

Table and figure (8) below point the answer of the study of the statement about the method the content was presented. The participants answered with 30.0% and 70.0% which is v. good and excellent respectively, this indicate that the method the content is presented was excellent.

Table (8) Presentation Method

	Frequency	**Percentage**
v.good	**3**	**30.0%**
excellent	**7**	**70.0%**
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019

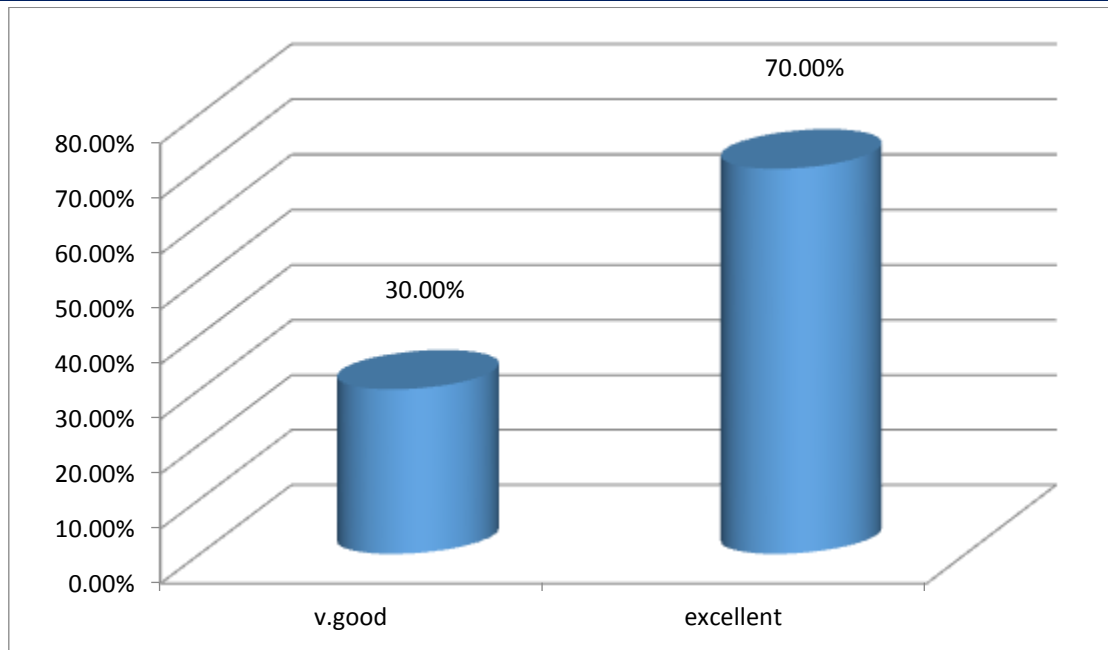**Figure (8)** Presentation Method

Table and figure (9) below point the answer of the study of the statement, 'how sufficient is the trainer'. The participant feedback was 10.0% and 90.0% which is in v. good and excellent respectively, these indicate that the trainer has excellent presentation skills.

Table (9) How sufficient is the trainer

	Frequency	**Percentage**
v.good	1	10.0%
Excellent	9	90.0%
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019

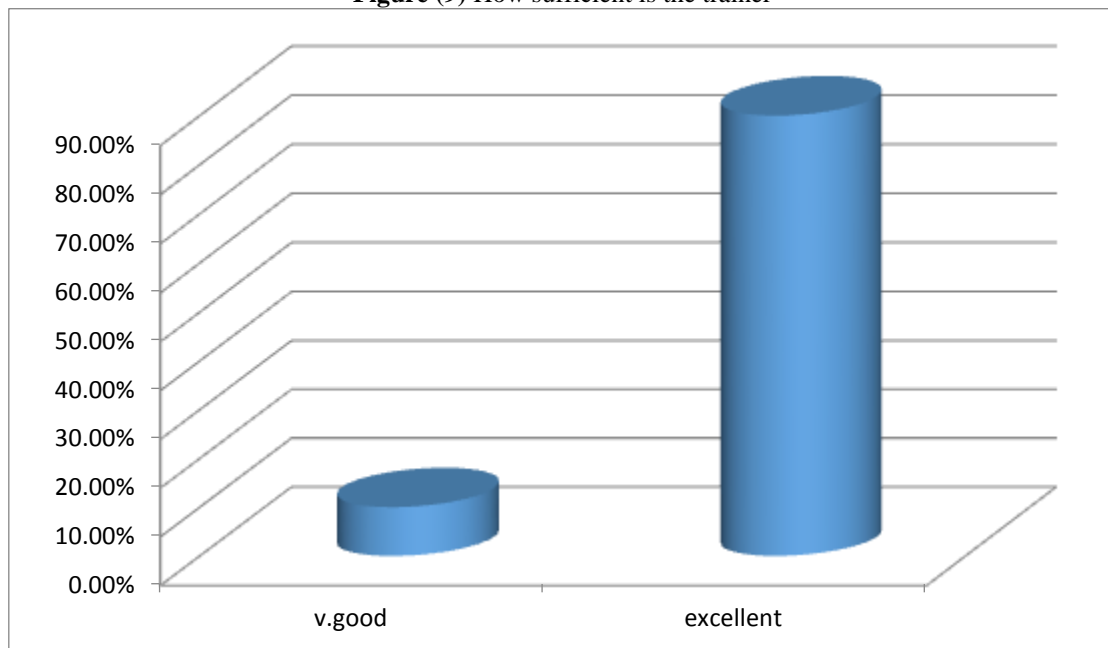**Figure (9)** How sufficient is the trainer

Table and figure (10) below point the answer of the study of the statement, 'what is your assessment of the training program in general'. The results show percentage is 30.0% and 70.0% which is in good and excellent respectively, this indicate that the training program is excellent in general.

Table (10) what is your assessment of the training program in general

	Frequency	**Percentage**
good	3	30.0%
excellent	7	70.0%
Total	10	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019

Figure (10) what is your assessment of the training program in general
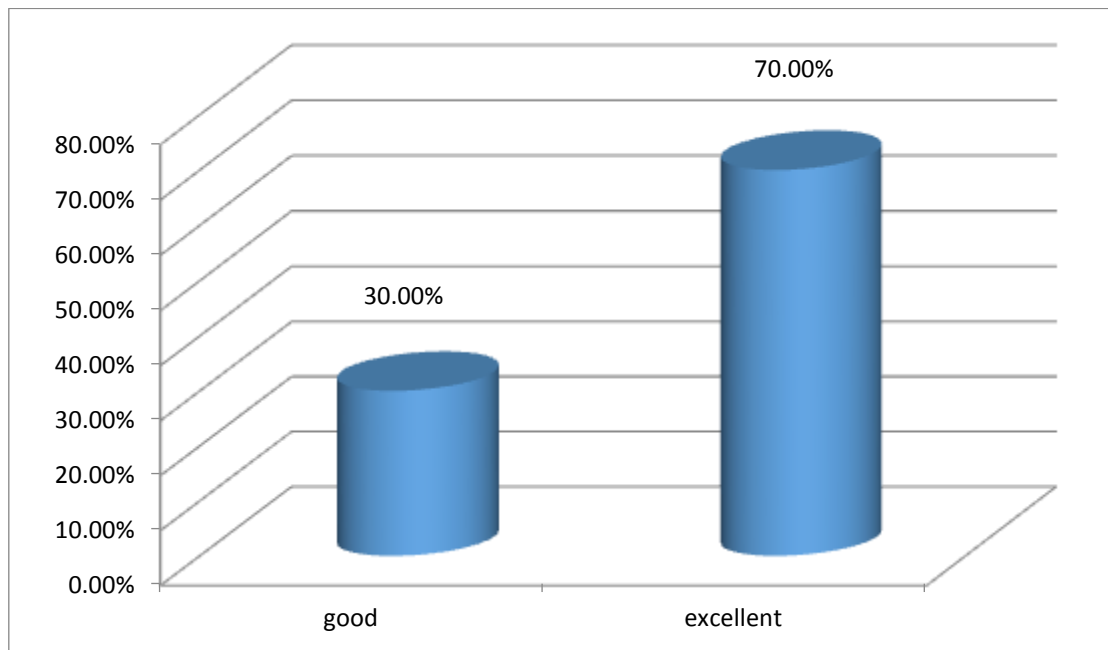

Table and figure (11) below show that the percentage for all statement, 5% good, 33.3% v.good and 61.7% excellent, so the higher percentage is 61.7% which indicated that most samples study answers is excellent.

Table (11) frequencies and percentages for the answers to all statement

Statement	good	V. good	Excellent	Tot
1.The program meets the trainees wishes with appreciation	-	6 60%	4 40%	10
2.How appropriate is the training environment	-	6 60%	4 40%	10
3.The extent to which the content is sufficient	-	4 40%	6 60%	10
4.The method the content is presented	-	3 30%	7 70%	10
5.What a sufficient trainer	-	1 10%	9 90%	10
6.What is your assessment of the training program in general	3 30%	-	7 70%	10
Total	3 5%	20 33.3%	37 61.7%	

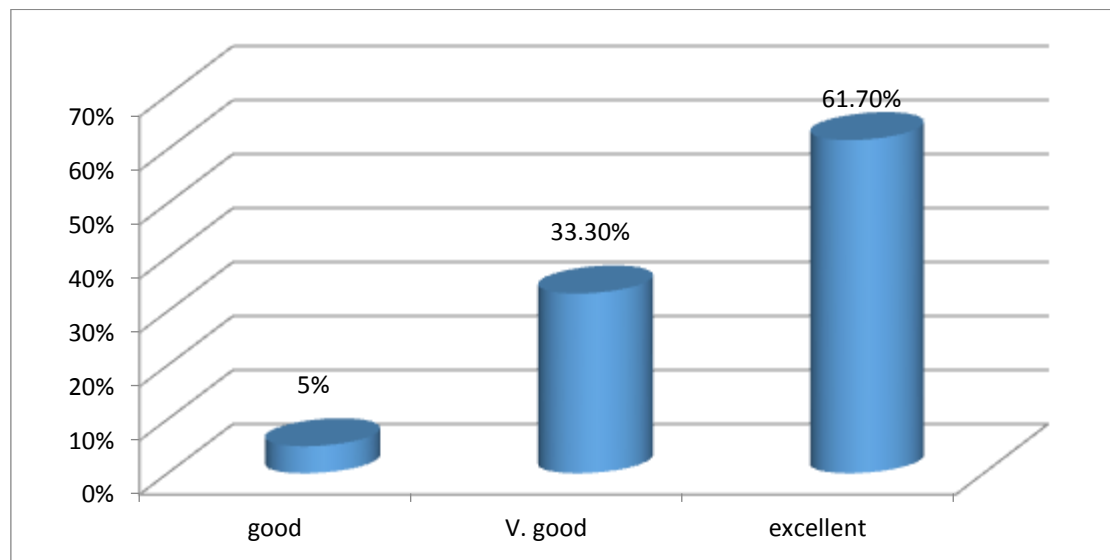**Figure (11) frequencies and percentages for the answers to all statement**

Table (12) below show that all statement means greater than 2 this indicate that all statement are agreeable with very good and excellent, and the deferent between minimum and maximum standard deviation value must be less than one, and T value also greater than T table with 0.05 significant 2.57, and the sig value is less than 0.05.

Table (13) mean and slandered deviation and (T) test

Statement	mean	slandered deviation	T test	Sig
1.The program meets the trainees wishes with appreciation	2.40	.516	14.697	.000
2.How appropriate is the training environment	2.40	.516	14.697	.000
3.The extent to which the content is sufficient	2.60	.516	15.922	.000
4.The method the content is presented	2.70	.483	17.676	.000
5.What a sufficient trainer	2.90	.316	29.000	.000
6.What is your assessment of the training program in general	2.40	.966	7.856	.000

Section three

To investigate the challenges expected to face the trainers a number of questions were posted. The questions were divided into administrative, performance and skills and environment.

The first challenges investigated the administrative challenges. Table and figure (13) below show that the 50% of the participants see that Electricity is a challenge, and 16.7% see that communication with literacy department is also a challenge and 33.3% see that lack of personal lap tops is a challenge.

Table (13) Administrative challenges

Items	Frequencies	Percentage
Electricity	15	% 50
Communication with literacy department	5	%16.7
No computers	10	%33.3
total	30	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019.

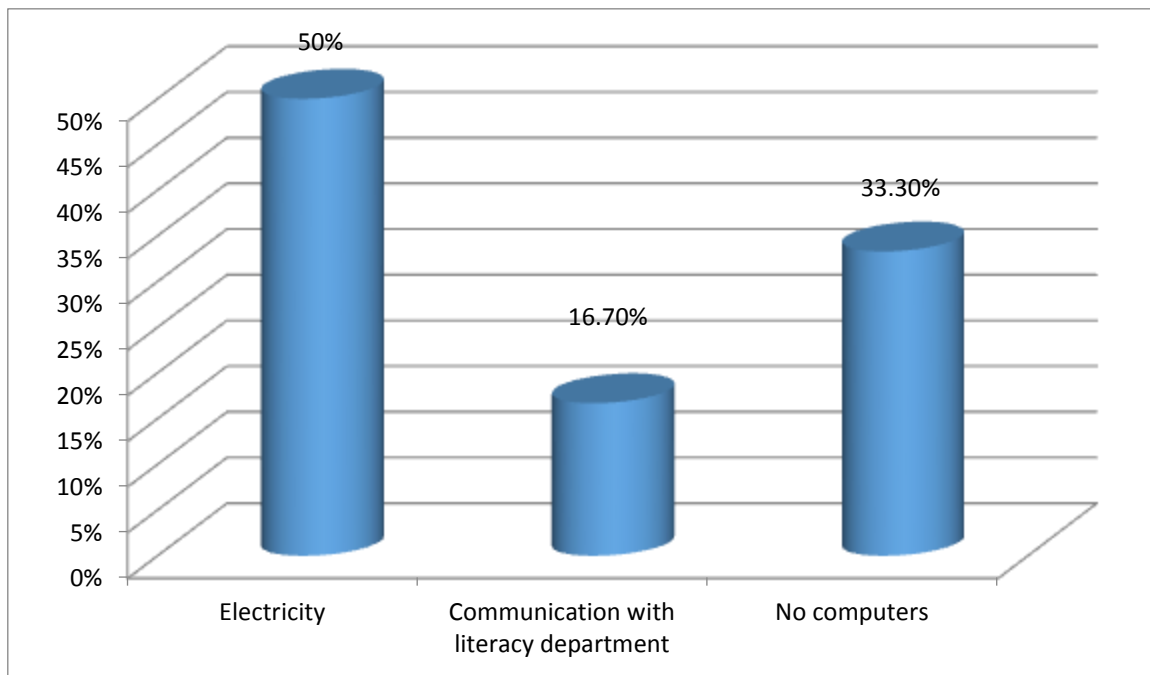## Figures (13) Administrative challenges

Table and figure (14) below show that the answers of the sample study to the questions show that 43% see that the main challenge that will face the trainers is the navigation skills, and 33.3% see that the challenges face the trainers are no teaching skills and 23.3% see the main challenge is the design of learning items.

Table (14) Performance and skills

Items	Frequencies	Percentage
navigation	13	43.3%
No skills of teaching	10	33.3%
Design of learning items	7	23.3%
total	30	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019.
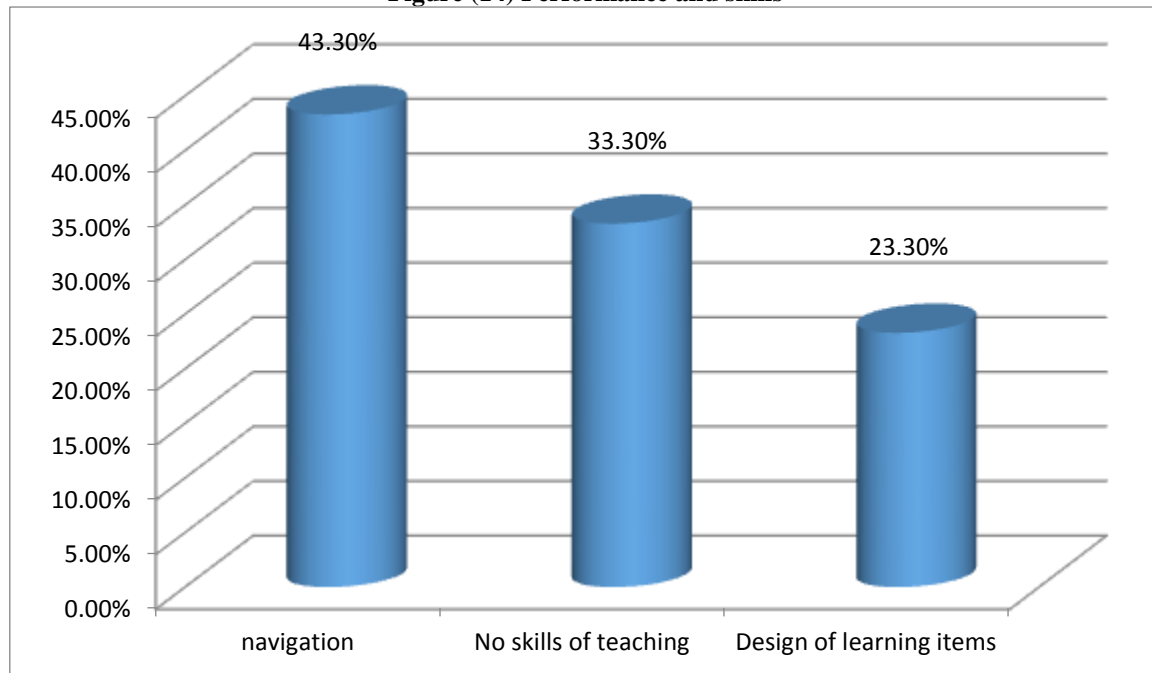
Figure (14) Performance and skills

Table and figure (14 a) below show that the answers of the sample study to the environment challenges are that 20% is time of training, 50% see that the main challenge is no labs are available and 30% see the distance between learners is the main challenge.

Table (14a) Challenges: Environment

Items	Frequencies	Percentage
times	6	20%
No labs	15	50%
Distance between learners	9	30%
Total	30	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019.

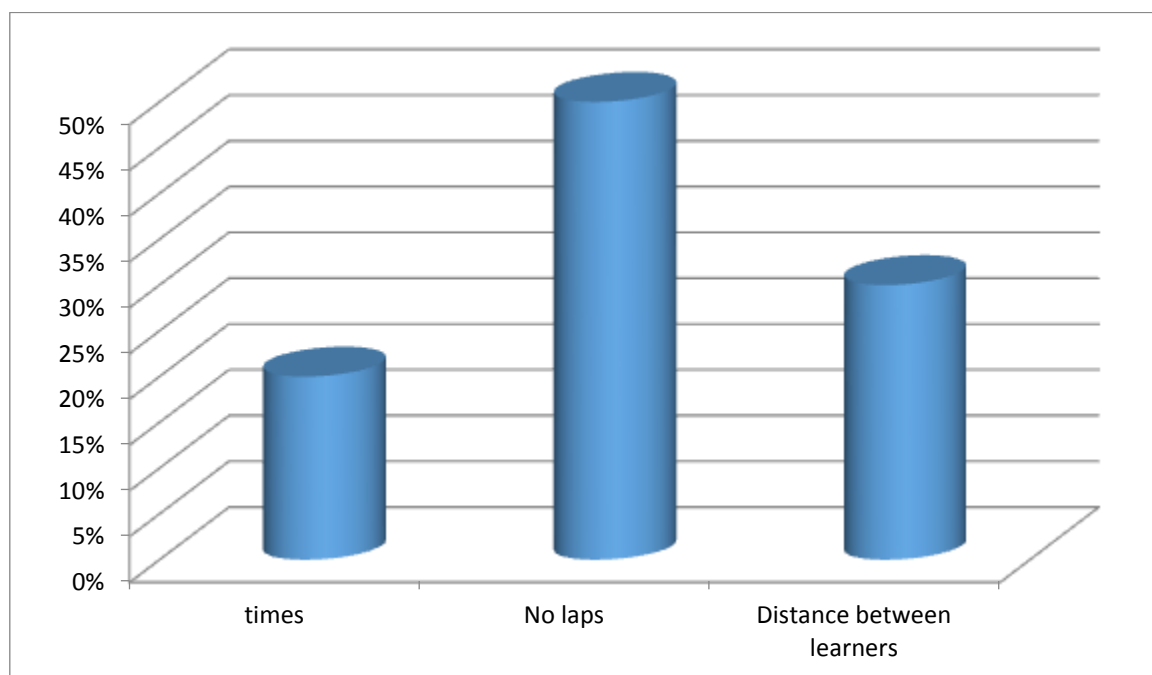**Figure (14a) Challenges: Environment**

Table and figure (14 b) below show the other challenges that might face the trainers. 33.3% of the trainers see the that lack telephones is the main challenge, and 26.7% see that the main challenge that might face the trainers is distance between labs and learners and 40% see that the lack of financial support in the form of incentives is the main challenge.

Table (14b) Challenges: Environment

Items	Frequencies	Percentage
No telephones	10	33.3%
Distance between laps and learners	8	26.7%
Financial support	12	40%
Total	30	100%

Source: Preparation of the researcher, based on the questionnaire data, 2019.

Table (14b) Challenges: Environment
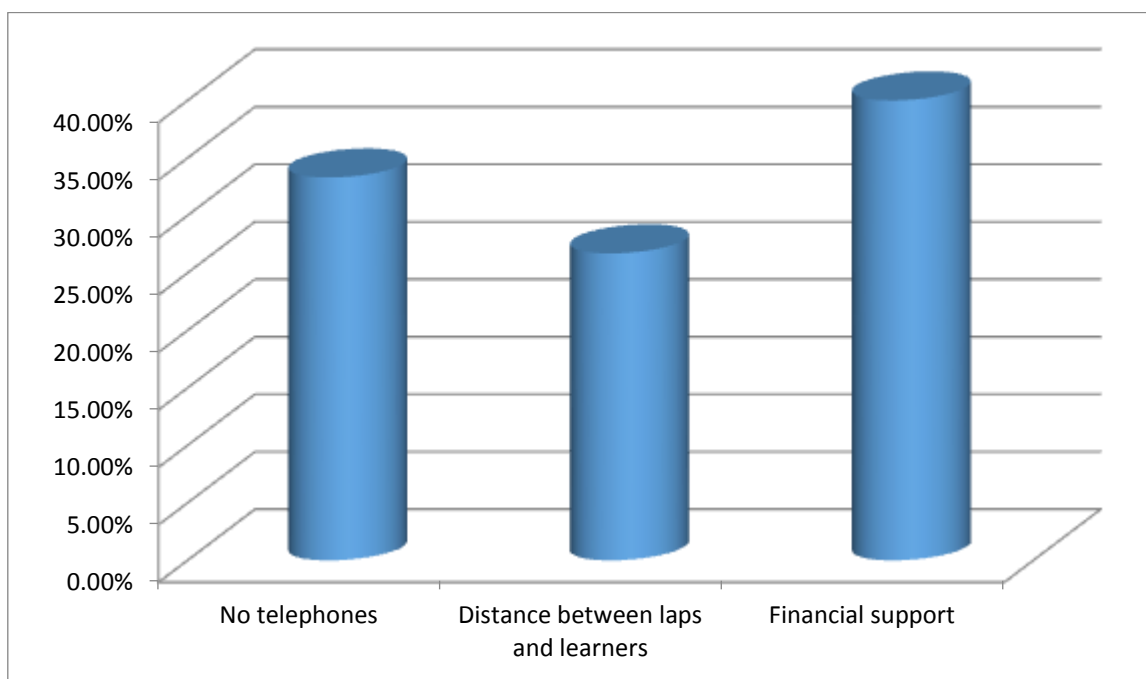
10. Finding:
The questionnaire feedback and analysis gave a lot of feedback to the project administration. It is hoped that this feedback can be sued to improve the project running and execution. The main findings are as follow:
1. The training programme met the trainees wishes and aspirations.
2. Appropriate training environment
3. content is sufficient and is seen as excellent
4. Method of content presentation is excellent.
5. Trainer skills are excellent
6. Training programme is excellent in general

The challenges that are expected to meet the trainees when applying the programmes were investigated and the main findings are:

1. The main administrative challenges expected to face the trainers is electricity cuts.
2. The main challenge expected to face the trainers in their performance is the lack navigation skills.
3. The main administrative challenges expected to face the trainers in the environment is the lack of computer labs.
4. The main administrative challenges expected to face the trainers is lack financial support.

11. Conclusion
The feedback collected from the trainees shows that the benefited a lot from the training but they still need more training in navigation skills and the software divisions. The trainees expressed their expected challenges with the start of the project. Their expectations will give an excellent indicator for the project co-ordination team. The researcher suggested that the project co-ordination should prepare for the following:

1. Avoid electricity cuts by providing an alternative source of energy
2. Provide all trainers with lab tops before the start of the project to enable them to practice navigation of the software before the start of the training.
3. Provide some financial incentives for the trainers to support them with transport, stationary etc.
4. Provide support to the trainers but opening communication channels with the literacy department at the Ministry of Education.
5. Provide incentive to enable the trainers to use their personal mobiles during the project duration.

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