

ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES

**A Comparative study of the Training Facilities Rendered to
Information Technology Students in Government and Private
TVET Colleges in Addis Ababa.**

AYELE TESSEMA



**July, 2007
Addis Ababa**

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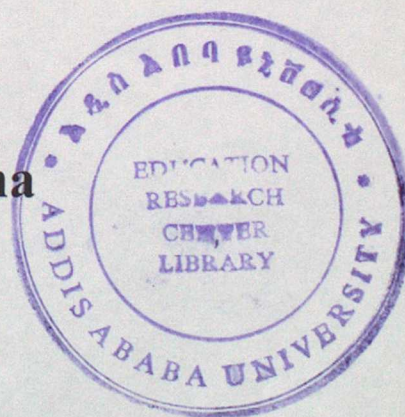
ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES

**A Comparative study of the Training Facilities Rendered to Information
Technology Students in Government and Private TVET Colleges in
Addis Ababa.**

**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE
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**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS IN
VOCATIONAL EDUCATION MANAGEMENT**

**By
Ayele Tessema**



**July, 2007
ADDIS ABABA**

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Ayele Tessema

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Abstract

The major purpose of the study was to investigate the current status of government and private TVET colleges in terms of availability and proper utilization of resource facilities upon implementing IT training programs. Accordingly, data was collected through questionnaire, observation and document analysis. A questionnaire was distributed to five government and ten private TVET colleges and responses were elicited from a total of 75 teacher respondents and 356 student respondents. For the purpose of analysis, statistical techniques such as percentage and one-way ANOVA were employed. In the final analysis, the study revealed that, private TVET colleges had better IT training facilities in terms of quality and quantity in relation to the number of students enrolled in their colleges as compared to that of government colleges. However, among other problems, both types of TVET colleges lacked sufficient Internet connectivity and Internet services to students which should be part of the IT training programs in the TVET system. Besides, in both types of colleges, less emphasis were given to the practical aspect of the training program which was contrary to the methods of the trainings set on the curriculum of the TVET. Finally, based on the findings and conclusion drawn, it is recommended that, along with other facilities both types of colleges should give more emphasis to the practical aspects of the training and should provide Internet services to students. Mainly, government colleges should give due attention to fulfill the required amount of training facilities that go in line with the number of trainees enrolled in their respective colleges.

List of Acronyms

IT – Information Technology

ICT – Information and communication Technology

OJT – On- the job Training

PC – personal computer or microcomputer.

TVET- Technical and vocational Education and Training

WWW – Word Wide Web (The Net)

CHAPTER 1

1.1 Background of the problem

Information Technology is one of the tools of the modern technological development. It is clear that advances in technology during the past few decades have contributed to a tremendous expansion in access to information for students. Since the world moves increasingly towards an information society, computers and information can play a leading role in this transformation. Today, one can not talk about development without talking about computers. This is because of the fact that technology is a tool to unlock learning and expand the horizons of students (Hatlen, 1996). On the other hand, computers and computer literacy are indispensable in today's information society. This underscores the need for creating a computer literate society.

It is observed that information and communication technologies are rapidly changing the way individuals live, firms to do business, governments administer and nations interact. What is clear is that no country is left untouched by the information revolution. Governments recognize that one after the other, developed and developing countries are engaging in initiatives and formulating policies to maximize their potential to exploit the new technologies. Ethiopia is no different. A successful TVET policy must be consistent with overarching national goals and objectives and grounded in the reality of the state of information and communications technologies at the time. It should seek to build on strengths and overcome weaknesses in the current application of technology, communications infrastructures and human resources.

Hans-Heinrich in UNESCO (1999), said that "technical and vocational education offers an extremely vital empowering tool for improving living conditions" by enhancing the capacities of individuals to "gain employment, obtain decent work, increase their earning

power” and thus impacts “on the ability to afford good health care, adequate food, clothing and shelter”.

Also Miss Bulmahn in UNESCO(1999) argued that orienting TVET to the needs of industry and the world of work are “an indispensable prerequisite” for success – but that it was not enough. She argued that “we need a more comprehensive perspective – the perspective of sustainable development which ensures the ability of the current generation to cope with future problems and, at the same time, safeguards opportunities of future generations”.

Vocational education and training does not only impart modern occupation-related skills and knowledge but also cross-occupational skills such as independence and communication skills, the ability for networked thinking, openness towards other cultures and the ability to deal with contradictions and conflicts. In this sense, vocational education and training promotes the ability to recognize and use opportunities for sustainable action at the workplace. Furthermore, it enables people, as consumers and politically mature citizens, that takes responsibility.

It is important to realize that while education is a key to any development strategy, TVET is the master key that can transform the world of work and the economy, alleviate poverty, save the environment, and improve the quality of life. As students are being prepared to become efficient, skilful and competent workers, they can at the same time be educated to become productive and responsible citizens, the creators of better tomorrows, of sustainable future societies.

According to UNESCO and ILO in UNESCO(2004) the objectives of technical and vocational education are:-

- a) Permit the harmonious development of personality and character and foster spiritual and human values, the capacity for understanding, judgment, critical thinking and self- expression;

- b) Prepare the individual for lifelong learning by developing the necessary mental tools, Technical and entrepreneurial skills and attitudes;
- c) Develop capacities for decision-making and the qualities necessary for active and intelligent participation, teamwork and leadership at work and in the community as a whole.

In this regard, the Government of Federal Democratic Republic of Ethiopia has given great emphasis on expanding and improving technical and vocational education to enable the country's production, trade, and service rendering establishments to have a competitive and enduring organizational setup through the employment of trained man power.

As it is indicated in the Ethiopian TVET strategy (Negarit Gazeta, Proclamation N.391/2004:2557), persons to be admitted to and trained in areas of different sectors in the Middle Level Technical and Vocational Education and Training program shall have completed general secondary education (Grade 10) and have the inclination and the will to be so trained. The policy also emphasizes the need to fulfill the minimum requirement facilities for the technical and vocational trainings.

According to the National TVET Strategy (2006:10) objectives of the TVET strategies are:-

- Create competent, motivated, adaptable and innovative workforce in Ethiopia.
- Strengthen the culture of self-employment and support innovations in the Ethiopian economy.
- Improve the quality of TVET and make it response to the needs of the labour market.
- Develop a sustainable financing system for TVET with efficient and cost effective delivery system and management structures.

Having these objectives as a framework, one of the strategies in realizing the education and training policy in the area of TVET is the availability of resources and enough materials in the implementation of the trainings; in particular on the training of Information Technology.

The use of IT at a very small level was introduced a little over two decades by some business organizations in Ethiopia, like the National bank of Ethiopia, Commercial Bank of Ethiopia, the Ethiopian Air Lines, etc. In this regard, computers were introduced into schools only after having played a major part in other institutions.

As I have found it from my discussion with school principals, in Ethiopia, private schools were using to teach computers prior to the government schools. the principals also indicated that, IT education in government schools was started in 2001 and further strengthen to be one part of a training program in the TVET colleges..

The prospects of information technology for Ethiopia are tremendous. Nowadays it would be difficult to run an institution without using computer since traditional typewriters are replaced by desktop machines. Information Technology that can be used, maintained and developed by the indigenous professionals is Crucial. Education and training is a key to building indigenous capacity that helps reduce dependence on developed world, to cut under-utilization of existing equipments and to help apply technology for solving local complex problems.

In this sense then; it is inevitable that college students as well as the future employees should have the necessary skill development in the subject matter of Information technology especially in the practical skill development on how to use computers efficiently. This practical skill is largely determined by the effectiveness of instruction given and by the efficient utilization of training facilities. Thus, any training requires well equipped and designed, furnished and organized laboratories in a way that it can accommodate trainees.

The question of considerable resource and facilities rendered is an important aspect to any technical and vocational training. For instance, UNESCO (2000) indicated that:-

How well a technical vocational program accomplishes its aims, depends in a large part on the availability of resources, the suitability of its building and the extent to which its materials and equipment are kept up to date.

In this regard, quality of training and effectiveness of instruction given in the TVET Colleges giving information Technology training, are largely determined by efficient utilization of all the necessary training facilities and improved methods of teaching, which realize the practical skill development of the students.

Giving attention to the above discussion, the idea of Information Technology in Ethiopia is beginning to emerge so that giving effective training is not an easy task. Furthermore, IT students in less economically developed countries face various problems that create obstacles on them not to achieve the desirable outcome effectively and efficiently because of the following reasons. As example in Ethiopia, it is found that scarcity of financial resources, shortage of necessary educational materials, inadequate facilities, insufficient training of teachers, and qualified manpower requirements could be some of the challenges as well as the services rendered for TVET students are also either unorganized or very low in quality.

Again, as I have also observed teaching them, IT students have had no previous knowledge of computers that enables them easily understand what they are learning currently. Even some of them might have not touch a keyboard button before. Particularly, in the field of Information technology, there are many skills which cannot be gained through lectures and reading materials unless they are provided a practical training with the necessary technological materials and equipments (such as networked computers). Therefore, it is clear that lacking technological facilities could create obstacles on them from achieving the intended objectives. On the other side, they may give up to learn some difficult skills knowing that they never achieve as the result of lacking sufficient trainings. Bearing these observations in mind, the student researcher initiated to make a comparative study of training facilities rendered to IT students in government and private TVET colleges of Addis Ababa to investigate the impact of availability and utilization of training facilities in Government and Private Colleges in

implementing Information Technology training.

1.2 Statement of the problem

In spite of its considerable benefits, the provision of technical-vocational education and training is more expensive than the provision of general academic education. Moreover, (ILO, 1999:1; Yekunoamlack, 2000:3) state some of problems that are associated with resources allocated for a particular vocational-technical education and training that there are many ways in which resources intended for training may fail to result in a program being established: the funds may be misspent, or may be spent on initial planning and administrative costs without hiring the instructors who are the heart of the program, or a program may start but fail to accommodate required number of students or trainees. Bearing this in mind, the study focused on comparison of the facilities rendered to students in government and private colleges upon implementing Information Technology (IT) training. Thus the researcher prefers to undertake a comparative study of Government and private colleges upon implementing IT training Program.

To enable the researcher conduct the proper investigation the study attempts to answer the following basic questions.

1. Are the colleges equipped with the necessary IT infrastructures (building, proper computer laboratories, network, etc.) to implement Information Technology training?
2. Are there adequate internal facilities and proper utilization of resources?
3. Do teachers have the necessary qualification and competency?
4. Which courses are sufficiently delivered and which are not.?
5. What are the significant similarities and difference between private and government colleges?

1.3 Objective of the Study

As far as this study is concerned, it is assumed that no attempt has been made to assess the impact of the availability and proper utilization of resources and training facilities upon implementing Information Technology training. The primary objective of this paper is to survey the existing IT resources and facilities in TVET colleges, with a view to describing broad themes in the work to date, and to identifying strengths and weaknesses in the utilization of IT resources. Therefore, the general objective of this study is to find out the impact of availability of adequate training facilities in government and private colleges of Addis Ababa upon implementing Information Technology training. More specifically, the study will:

1. To see whether the colleges equipped with the necessary IT infrastructures (building, proper computer laboratories, network, etc.) to implement Information Technology training or not.
2. To evaluate the adequacy of the internal facilities and proper utilization of resources.
3. To discover whether teachers have the necessary qualification and competency.
4. To identify which courses are sufficiently delivered and which are not.
5. To find out the significant similarities and difference between private and government colleges.

1.4 Significance of the study

The extent to which the government and private colleges providing TVET trainings are utilizing resource facilities in producing IT trained personnel is the corner stone of this study. The investigation regarding the adequacy and availability of training facilities of both types of colleges can be identified and thereby they may share some of their experiences.

The researcher believes that this study.

- May help to insight the current status of TVET colleges in terms of the availability & proper utilization of resource facilities upon implementing IT training.

- Helps the policy makers to consider the situation of IT students when modifying the curriculum
- May serve as a springboard for further research in the area.

1.5 Delimitation of the study

There are five government TVET colleges and twenty-seven private TVET colleges in Addis Ababa in which Information Technology training have been given as a training program.

In order to have a complete picture of problems faced in the availability and Utilization of training facilities, which assist the provision of IT training programs, it should have included all the colleges, which give IT training programs. However, delimitation has been made because it would be very difficult to manage with in the limited span of time if all colleges were included.

Therefore, to make it manageable, out of the twenty-seven private TVET colleges found in Addis Ababa, ten of them have been sampled and all the five colleges from government were considered for the purpose of this study.

1.6 Research Methodology

The method used to conduct this research was comparative study. Comparative study was selected due to the nature of the research that it attempts to discover the existing strength and weakness in rendering and properly utilizing training facilities in both government and private colleges. In order to collect data three basic tools i.e questionnaire, observation and consulting related documents were employed.

1.6.1 Questionnaires

Two types of questionnaires were administered. These were open-ended and closed types. The purposes of these Questionnaires were to help collect further relevant information regarding the major problems on the availability and adequacy of training facilities in reaching the desired goals of IT training. Three types of Questionnaires were designed. These were for students, for teachers and for principals or department heads. As data collection tools, closed and open-ended were prepared in English language which latter were translated into Amharic language for the convince of student respondents to understand.

The questionnaire for students consisted of 15 items, the teachers' questionnaire had 20 items and the principals' or department heads' had 18 items. Moreover, open- end questions requiring the respondents to state some significant specific educational problems that the students could face were prepared with requiring the respondents to suggest ways in which those problems could be overcome.

1.6.2 Observation

In order to meet the objective of the study and to consolidate the research with different techniques, the researcher prepared a checklist and made a systematic observation of laboratory organization and library and the college environment as a whole.

1.6.3. Literature Review

The data for this study were obtained from both primary and secondary sources. To support the findings of the study, relevant books and journals, which indicate the practice of IT training, were consulted. Furthermore, through reports and documents in the Addis Ababa experience of government and private colleges were reviewed.

1.7. Population and Sampling Techniques

In Addis Ababa, there are five government and twenty-seven Private TVET Colleges, which give IT training. In order to have a complete picture of problems encountered in

the availability and utilization of training resource facilities, which assist the provision of IT training programs, all the five colleges from government and ten colleges from the private were selected as a sample of this study.

The research employed purposive sampling Techniques for private colleges. The first five Colleges were selected on the basis of having large number of IT students when compared with the rest of private colleges. These were:

1. Admas University College
2. CPU Information & Technology College
3. Micro Link Information & Technology College
4. St. Marys' University College.
5. Unity University College

The most probable reason for these Colleges to have large number of trainees might be the provision of training facilities and the availability of qualified instructors in these Colleges might be attractive enough for the trainees to be enrolled in large number. Therefore this assumption initiated the researcher to purposely select the above mentioned Colleges.

The rest five private Colleges were also selected using purposive sampling Technique on the basis of having equal status with the government Colleges with respect to their number of trainees. These were:

6. Awolia College
6. Infonet College
7. Kokeb Technology & Commerce College
8. New Abyssina College
9. Rift Valley University College.

In order to ascertain representation, out of the total 3560 students, 356(10%) and from among 192 teachers, 96(50%) of the existing total number of teacher respondents in the sample areas were included in the study. The group of respondents were consisted of management bodies of respective Colleges including principals/ Deans of colleges or department heads of IT. However, the research employed random sampling technique for trainees and availability sampling technique based on willingness were used for teachers since their number was relatively low.

1.7.1 Data collection Instruments and procedures

The processes of data collection were run as follows. Official letters that clarify the purpose and objectives of the study were handed over to the Colleges officials. More clarifications were made to the officials and IT department heads of each college. After getting their consent for cooperation, a time table was set of assuring convenient place and time for the respondents. The researcher also employed one assistance researcher to help him because he realized the problems of collecting data during making a term paper on similar topic for the course of research methodology.

As data collection tools, closed and open-end Questionnaires were chosen for the main reason that they are tools proved effective for gathering a variety of opinions from large population with in a short period of time.

1.7.2 Analysis of Data

Relevant methods of analysis were used to analyze the data gathered. Accordingly, responses were categorized and frequencies were tailed. The basic statistical techniques were used to:

- Analyze various characteristics of the sample population by using **frequency counts and percentage**. This statistical instrument helps to determine the relative standing characteristics such as age, sex, qualifications & work experience.
- Determine the significant differences between the government and private as well as among the teachers and students based upon their views concerning the

availability and adequacy of training facilities in their colleges, one-way ANOVA was employed.

1.7 Definition of terms

1. **Information Technology (IT):** or information communication technology (ICT)

refers to the use of electronic computers and telecommunications network to create, store, process, send, and receive information from any where and anytime.

2. **Technical Training:-** is a training that involves the development of specific skills that are needed to perform a particular job or series of jobs. In the case of IT training, it is a training that involves the development of computer skill to perform simple computer programs and practical skills such as maintenance of computers.

3. **Training Facilities:** articles such as furniture up-to-date computers, printers, scanners, books, networking facilities, Internet connectivity etc. that are used without being consumed.

4. **Vocational Training:-** activities, which aims to provide the knowledge and practical training for the development of skills required within an occupation or group of occupations. In the case of IT training programs, it is an activity which aims to produce skilled and competent middle level IT personnel.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1. Historical Development of vocational Education

Through out the history, there have been stories told about remarkable and talented people who educate themselves and make a significant contribution to their society. The oldest method of meeting manpower needs was for father and mother to pass on their children the skills they acquired from their parents, plus what they had learned by trial and error during a generation of productive work. But when a technological revolution such as the substitution of agriculture for hunting or the substitution of bronze for stone tools occurred, transition of the family heritage was no longer a satisfactory educational program for workers in the newly generated occupations.(Evan, Repyrt N.,1971)

While training by the parent was accomplished almost entirely at the place of work and was carried out simultaneously with productive activity, the next type of on-the -job training (OJT) by persons other than parents occurred whenever members of more than one family were engaged in a productive activity. OJT has always been relatively haphazard. There is no guarantee that the new worker will learn everything about the occupation. Instead be probably will, learn only a portion of what is practiced in a particular place of employment at a certain time.

Apprenticeship attempted to combine the best of family instruction and OJT by having an experienced worker agree to teach the full range of an occupation. In return the trainer received the services of the apprentice for a certain time span often ten or more years.

Gradually, according to Abramson (1979) in Getachew Adere (2004:13), the development of power machinery and the increased demands for goods led to greater demand for mass production then apprenticeship. Hence, industrial revolution was the main reason for the decline of middle age apprenticeship and emergence of formal schools.

As time went schools later universities & colleges became the newest device of society for providing occupational skills.

A community of practitioners could gain a monopoly to exercise a certain craft and uphold its standards. In Europe, guilds were the result of such reorganization. The latter even took their titles from these guilds, such as 'bachelor' and 'master'. In this process, training for work became increasingly separated from work and often took place in institutions specialized in Technical and Vocational education. Instruction began to take the form of preparation rather than of participation. It became a phase in life rather than life itself. This development gained momentum from the development of knowledge, which became increasingly universal and general rather than local and specific. Hence, in our changing world, the demand for technical vocational education is becoming very high. (UNESCO, 2004).

2.2 Historical development of Vocational Education in Ethiopia

The current Technical and vocational education in Ethiopia did not come into being without passing through various challenges.

Prior to the 20th century the educational system of the country was predominantly religious oriented and intended to serve the manpower need of the church and the state. (Yekunoamlak, 2000:37).

As stated by MOE(1973:30) quoted in yekunoamlak Alemu Masters thesis,2000:37), "modern Education was introduced during the reign of Menilik II with the establishment of Menlik II School 1908. During the time of Emperor Haile Selassie I Schools were fairly expanded. There were about 30 academic Schools in the country from 1925 to 1953. The first Vocational School of Addis Ababa was established by the MOE in 1941 under the names of 'Ecole National des Arts' commonly, known as "ENAT". French was used as a medium of instruction in addition to Amharic. Later on, the MOE changed the name of the school to "Technical School" and the language of instruction became English and Amharic."

With the objective of making the curriculum job oriented and to produce middle level manpower, the concept of comprehensive program was introduced in 1961 to the secondary schools of Ethiopia. The first general secondary school to be converted to comprehensive secondary school was woizero Sihen School in Dessie. (Getachew Adere,2004:18)

As stated by Wanna(1996)quoted in Getachew Adere(2004:18) :-

since the early 1960, many African countries including Ethiopia convinced that human resource development is the prerequisite for economic development. In the endeavor to implement this movement, Ethiopia patterned the formal schooling on the experience of developed countries hoping that it will contribute the present economic growth. It was the aim that vocational training was incorporated in the secondary school system of Ethiopia.

Traditionally, Technical and Vocational Education and Training (TVET) in Ethiopia has been fragmented and delivered by different providers at various qualification levels. Public TVET institutions under the education sector, concentrating on middle level technical training at post Grade 10 level, and private companies, TVET schools run by (mainly church based) NGOs and an increasing number of private commercial TVET providers.(Getachew Heluf, 2005)

During the late 1990s, the Federal government of Ethiopia committed itself to overhauling and reforming the basic framework conditions of the TVET system. This recognized the fact that while the country was highly in need of skilled technicians, training programs lacked relevance to the workplace reality. This reform process, however, was slow and limited by the fact that all efforts and resources were directed towards the massive quantitative expansion of the public TVET supply. As a consequence, programs, by-and-large, do not address actual skills needs in the economy, with most programs of low quality and theory-driven due to resource constraints and lack

of skilled TVET teachers. A systematic integration of TVET with the world of work has not yet been achieved. Most curricula used in formal TVET were developed without sufficient involvement of employers. (National TVET Strategy, 2006:8)

To overcome these problems, as indicated in the national TVET strategy (2006: 9), important reform steps have been introduced after the adoption of the National TVET Strategy of 2002 and the TVET proclamation of 2004. This TVET Strategy 2002, was developed with the involvement of a broad range of stakeholders from the private and public sectors.

2.3 Objectives of Training programs of TVET Colleges

TVET represents a comprehensive and inclusive approach intended to help people achieve their full educational and vocational potentialities and as a result make meaningful participation in the development efforts of their community. (UNESCO, 2002:19) In most countries of the world, thus, the introduction of systematic and well planned and rigorous program of TVET has become a vital component of education and training programmes. As Stated in the Ethiopian TVET strategy (Negarit Gazeta, Proclamation N.391/2004:2557), the purpose of Technical and vocational Training program is to prepare middle level skilled man power in various trades. The goal of TVET system is to create a competent, capable workforce (both male and female) to be the backbone of economic and social development in Ethiopia, and to enable an increasing number of Ethiopians to find gainful employment and self-employment in different economic sectors of the country(National TVET strategy, 2006:16).

2.4. Quality of the Training Program

TVET is often seen as "last choice education" because of a lack of quality. High-quality TVET, on the other hand, leads to a higher status and improved attractiveness of TVET. Also, high quality TVET programmes guarantee a strong link between what is learnt and the needs of the labour market, with the result that graduates are more likely to find suitable employment. Quality assurance is therefore essential at all levels throughout the TVET system.(UNESCO,2000).

As stated by Atchoarena (1994:128)quoted in Getachew Heluf Masters Thesis (2005:21) "quality is wide concept. It associates to both the quality of resources allocated to the training system (qualification of the teachers, availability and adequacy of equipments, student characteristics, budget, management etc.) and the quality of the desired outcomes. Quality of training programs includes Institutional buildings, teacher training programs, Curriculum reforms, and provision of learning and teaching materials and equipment."

The question of quality is an important issue in TVET programs. Often, access to jobs that training provides depends on the nature and qualities of training; and job performance of graduates depends on the right kinds of skills acquired. Such quality of a program is usually affected by a number of factors. The information required to specify the important dimensions of quality may be extensive. The contents of some dimensions of quality are also unsettled and disputed Prokhorof (1997:10) in Getachew Heluf Masters Thesis (2005,22), In light of these elements, one may take a critical look at present trends in the quality of TVET. Consequently, according to UNESCO and ILO (2002:16), to ensure appropriate quality of training, national authorities should establish standards and criteria to be applied to all aspects of TVET

The introduction of some of these "quality-related" elements in TVET can contribute to additional costs. However, the long-term benefits for society and the economy are such that the initial costs related to the upgrading of quality are well-justified. Nevertheless,

high-quality TVET might be seen as unaffordable by many governments, enterprises and training providers. It is therefore particularly important that institutions in countries that have already developed and improved certain elements of quality assurance in TVET share their best practices and innovations with other countries.(UNESCO,2000)

The Ethiopian government education and training policy the education sector strategy assign high priority for the development of Technical and Vocational Education and Training (TVET) programs in the country. It also emphasizes in the need for expanding the vocational and technical training facilities through the provision of necessary funds, development of relevant curriculum, improving the standards of the trainers and the complementary role of the private sector(MOE,2002:16)

Public investment in TVET must primary be geared to ensuring quality improvements in existing public institutions will only be supported if sufficient resources can be allocated to sustain these investments, i.e. if necessary capital funds are available, future recurrent expenditure are appropriately budgeted for the medium and long-term public expenditure planning, and if appropriately qualified teachers instructors can be recruited in adequate numbers. (National TVET strategy, 2006:28)

2.4.1. Qualifications of Teachers in the Training colleges

A computer is simply a material or it is one of furniture in home unless there is a trained manpower that orders it what to do. A computer does not think or unable to give inputs for itself. It is human being that makes a computer to function. It needs a human knowledge how to operate a computer. Moreover, a computer does not teach students by its own unless it is guided by a well trained teacher. (Merill, etal.,1986)

For instance (UNCSCO: 2000) indicated that:

With the continued expansion of the public vocational training system, the rapid and uncontrolled growth of private training institutions and the emphasis on vocational training which is geared more appropriate to the needs of industry and employers, the gap between the supply of

appropriately skilled vocational trainers and current and future demand is substantial. This gap is both quantitative and qualitative.

Usually, like any other institution, teachers of TVET of Ethiopia are not limited only to offering courses, designed for the trainees but are also responsible for preparing trainees to satisfy the country's need for skilled manpower. Regarding the role played by teachers, UNESCO (2004:11).

Technical /vocational teacher are responsible not only for inculcating knowledge and skills but also, and most important, for preparing workers and technicians capable of contributing to a society which uses technology to serve the case of humanity.

Thus, this proposition confirms that teachers are the corner stone of TVET colleges. Moreover, it can also be noted that the quality of TVET colleges' performance largely depends upon the teachers who occupy the most important place in the teaching-learning process which links industrial society and educational technology. It is evident that TVET is a prerequisite for over-all development of nation. This can be achieved by having a well trained professional teacher in the TVET program.

High skilled, qualified, motivated, flexible and creative TVET teachers and instructors are the backbone of any TVET system, capable of adjusting-to changing technological environments and creating conducive learning environments for different target groups (National TVET strategy, 2006:31).

Quality can also be maintained though some standardization to provide reliability, consistency and definition of what TVET teachers' qualification encompasses in terms of technical skill and teaching competence (World Bank, 1993).

In line with the above, the Ethiopian TVET strategy stipulates the following requirements with regard to TVET teachers. These include: a bachelor qualification which is based on a professional standards of the engineering and other revised degree programmes and combined with pedagogical methodological and didactical modules (TVET strategy, 2006:31).

The teacher has to have some level of understanding of computer technology and understanding of programming languages. Sufficient technical support must be given to bridge the gap between the teacher's own abilities to do things and what is needed in order to make the training programs effective. In-service trainings must be provided to IT teacher, so that he can cop-up with the rapidly changing technology.(Robert, 1982:109)

2.4.2 Facilities of Training

Most of the courses in TVET programs usually have high development and recurrent cost. The more highly advanced the technology, the more expensive the needed equipment and materials will usually be. The extremely high cost of facilities makes it difficult to easily secure the latest technology. It should be noted, moreover, that textbooks, practice materials for workshops, are very essential to effective training as is effective maintenance of facilities and equipment. These elements contribute significantly to high recurrent costs typical of good quality vocational programs (Middleton, 1993).

Facilities of TVET programs with respect to IT training includes, computer student ratio, up-to-date ness of computers, networking facilities in the computer laboratories, Internet connectivity and Internet services to the trainees.

As indicated by Middleton (1993) quoted in Getachew Heluf Masters Thesis (2005: 25), "school laboratories mostly use out dated computers purchased on the cheap or given to them as donation by donors or leaving laboratories without adequate supplies. In consequence, the students training as well as its quality suffer considerably. Thus, availability of modern training facilities with adequate financial resources in any training institution are the major important factors for providing quality training for students as well as for providing skilled-manpower the labour market requires currently."

In this regard, MOE (2003:49) stipulates that, TVET institutions will have suitable laboratories and workshops: laboratories are field with the capacity to accommodate 20-30 trainees for each specialization, rooms for storing training and raw materials, discussion

and preparation rooms for trainers, administration and technical support rooms, library, auditorium, latrine and first aid room. With regard to training equipments and materials, the strategy states that there will be sufficient hand tools, machines and different equipment in conformity with the number of trainee in each field; basic and essential measurement equipments and materials, raw materials for training, appropriate teaching aids and others which are essential for training in each institution.

2.4.3 Admission(selection) Criteria

The purpose of TVET programs is to provide vocationally-oriented learning opportunities for young people in institutions across various ability ranges. Such provisions, however, are accompanied by a process of assessing and selecting learners at the admissions stage. This process is often valuable in order to admit learners to training programmes by establishing different entry requirement; and select people to practice a trade or profession by requiring specific types of experiences, units of competence or required grades from an academic or vocational qualification. (Eccelestone, 1996:) in Getachew Heluf (2005:27).

On the other hand, as stated by Lauglo (1993:4-5) quoted in Getachew Heluf Masters Thesis,(2005:27) " inadequate recruitment of suitable trainees is common throughout the world among TVET institutions; which result in poor quality of training. This is prevalent when the political goal of distributing education and training opportunities widely and equitably as well as the unofficial pressure in some countries to give privileged access to well-connected applicants. These conditions make it more difficult to enroll those student with some prior connection with, real aspiration for, the field or trade concerned; consequently, when students join TVET without much interest in a given field of specialization, the training will be unattractive to them; and it will becomes a rather demoralized waiting room".

Therefore, to maintain proper streaming, TVET institution should admit only those students who apply for admission having deep interest for vocational and technical training. Accordingly, it is wise to formulate a guideline of criteria for the selection of

trainees; such criteria will in turn help to promote the process of training. It also improves the competition and performance of the trainees and the achievement of the objectives of the training program.

In this regard, the Ethiopian TVET strategy (Negarit Gazeta, proclamation N. 91/2004:2558) stipulates criteria for admission for middle level TVET programs. Students qualifying to be admitted to this level of program are required to complete general secondary education and shall have inclination and the will to be so trained. Moreover, persons who have completed Junior TVET program and obtained a certificate are required to have two years of work experience and manageable evidence that they can fulfill the profile of completion general secondary education or have passed entrance examination, theoretical and practical, prepared for that purpose are suitable to be admitted to the Middle Level TVET programs.

2.4.4 Budget and Financing

Vocational Training Institutions are setup with new and modern training methods being offered. This has naturally led to questions being raised about the costs of training and the mechanisms of financing it. It is difficult to estimate the exact costs on TVET due to its complexities involved in the training systems. (UNESCO, 1993)

In most countries the budget for TVET from public sources is relatively small, ranging from 1% to 12% of the current expenditure on education.(UNESCO,1993)

Under-funding is a structural problem in the TVET sector, particularly in the public system. Costs of TVET are high, especially if it is provided as center-based training, which is still the predominant mode of TVET delivery in Ethiopia. As with most other countries, public TVET programmes in Ethiopia are usually more expensive than general education, resulting in a lower than average teacher/student ratio and substantial capital and recurrent losses incurred through practical training. As a consequence of budgetary constraints, most public TVET programmes are under-funded while rural public TVET programmes suffered from poor facilities and shortages of training materials. (National TVET Strategy, 2006:9)

According to UNESCO (1996:21) quoted in Getachew Heluf Masters Thesis, (2005:29) "TVET programs usually require tremendous amount of budget to run compared to general secondary education. It has been estimated that the cost of one technical school is equivalent to two or three schools offering general education. This high cost of the TVET is mainly due to smaller class size and the needs for expensive equipments, facilities and teaching materials. Without such equipment any vocational or technical training yields poor results and graduates are unable to find jobs. Like wise, in periods of tight government budgetary policies, the quality of training will fall and graduates encounter difficulties in securing employment opportunities."

Supporting the above, UNESCO (1993) describes that, as budget allocations from government sources for education get tighter, the squeeze on availability of funds for TVET apparent in so far as TVET depends on public funds. Costs of TVET as compared with general education are also 2 to 3 times higher as classes are small with instructor trainee ratio 1:7 sometimes (UNESCO,1993). Expenditure, on equipment infrastructure, consumable e.g. raw materials and spare parts is also much higher. It then imperative to search for alternative means of financing. The Challenge before policy makers is to introduce new and ways of financing as well as to insure that the resources which are available for TVET are used more effectively (UNESCO,1993).

To solve the above budgetary constraints, financial mechanisms have a central role to play in achieving the overall objective including maintaining quality. In this regard, a reconsideration of governments' dominant role in financing and provision of training at public training institutions is required. This implies that, in national training systems where public training budgets are constrained, it is customarily to seek alternative or additional funding mechanisms for public training. This is often referred to as funding diversification. This funding mechanism takes different forms: cost sharing, institutional income generation, greater cost recovery, levy-grant and voucher systems, student loan, etc. these mechanisms are also forwarded by MOE (2003:22).

As the TVET strategy indicates in the National TVET Strategy(2006:33),to sustainably

increase the quality and –gradually–the quantity of TVET, new funding mechanisms for TVET in Ethiopia will be developed. In the future, the resource constraints of the TVET system will be addressed by a combination of cost saving mechanisms (without compromising quality). Generation of external resources into the TVET system and diversification of funding sources for public TVET programmes.

A major mechanism to sustainable generate additional resources is to stimulate private investment in TVET. In line with the principles already outlined in other sections of this strategy, involvement of companies in TVET. This will include financial incentives for private investment in TVET and may also include co-financing, for instance through voucher schemes, out-sourcing of public training programmes, and others(National TVET Strategy,2006:33).

Moreover the strategy describes that, apart from these reforms, which are related to the open and flexible nature of the TVET delivery system, the TVET system will need to diversify its financing sources and mechanisms. The system will need to generate sufficient resources for public TVET provision and for the intended reinforcement of its governance and management structures, as well as develop much needed support services. This diversification will be approached in a way that government budgetary allocations and funds provided by foreign donors are gradually supplemented by contributions from direct beneficiaries of TVET without, however, putting the burden prohibitively high.

2.4.5 Vocational Guidance in TVET

According to the International Labor organization, in A.k Nayak and V.K Rao (2004:37), vocational guidance is the assistance rendered by an individual to another in the latter's solving of problems related to his progress and vocational selection keeping in mind the individual's peculiarities or special abilities and their relations with his occupational opportunity.

According to the International Labour organization, in A.k. Vayak (2004), the objectives of vocational guidance are:

- To assist students to acquire knowledge of the characteristics, functions, duty

requirements of occupations in which they are interested.

- To enable students to get relevant information about abilities and skills in terms of related qualifications and competencies required to take up the identified occupation.
- To enable students to understand their potentials and interest in relation to identified occupation or a group of occupations which they may take up.
- To enable students to choose the right type of jobs.

The selection of the right person for the right occupation is a key factor in the technological progress of a country. An organized vocational guidance programme in the institution may be of great help to meet these problems. Through this programme students get necessary information about different careers.

According to A.k Nayak (2004), vocational guidance services should be offered on the basis of a proper understanding of the potentialities of the students in terms of their aspirations, acquired knowledge and skills in relation to the nature of the job that can be expected to be of immense assistance to students in the choice of their careers.

2.5. The role of private sectors in promoting Access to Education and Training

Private colleges are an important source of formal computer training in Ethiopia. They provide courses which complement those of the public education system as they address aspects of labor market demand which are not provided by the public sector institutions- i.e. the short and medium term courses. These courses are particularly valuable to the unemployed (who can not get training through work) and which do not have the resources to set up in-house training. The longer professional diploma courses also open the door to those who were unable to enter the public tertiary institutions.

As indicated by UNESCO (1993:73-74) in almost all countries in the world education is provided in both the public and the private. The overall costs on education are on the increase. Developing countries are particularly hard hit due to the economic crisis. They need to improve productivity to enable them to compete in an era of rapid economic and technological change. They are also faced with the challenge of meeting the requirements of the education sector; to fulfill the overall responsibility vested in the state for development of human resources. Governments cannot shift the responsibility as education confers benefits to the society at large. It can at best harness the support of the private sector, the community and individuals in its endeavor to reach its goals towards social and economic development of the country (Dennis, 1993). On the other hand (UNESCO, 1993) contended that governments are searching for new and alternative mechanisms, the private sector is being drawn in justifiably for those who benefit must pay for it.

According to MOE(2002:13),it is imperative to mobilize the contribution of non-government organizations, private sectors and the community at large in promoting accesses to education and training. In MOE(2002:16),it is also added that the government had given emphasis on the complementary role of the private sector in expanding the vocational and technical training.

2.6 Information Technology

Information technology is a relatively recent and perhaps not particularly well-chosen addition to the English language. It has its counterparts in the French 'informatique' and the Russian 'informatika'. For many people, 'information technology' is synonymous with 'the new technology'- the use of microprocessor-based machines: microcomputers, automated equipment, word processors and the like. But the use of man-made tools for the collection, generation, communication, recording, re-arrangement and exploitation of information goes back in time much beyond the present 'micro-revolution'. For others, the significance of the introduction of a new term, 'information technology', is the belief that the principles, practice and terminology of information handling can be treated on a unified, systematic basis.(Zorkoczy, 1985:17)

Information and Communication Technologies (ICT), which is the convergence of information processing and information transmission technologies, have profound effect on every aspect of a society. In deed, nothing has influenced human civilization as information and communication technologies in modern times. ICT has been changing and affecting communication, trade, business making, culture, education, service provision, entertainment, research and other developmental activities of present society. In a nutshell, ICT has been affecting the way people live and work.(Paul chin, 2004)

As Kathy Nichol (2002) indicates, ICT having such profound effect on every society, therefore, needs to be mastered by every member of a society. In schools, the need for ICT education is overwhelming. As students study the natural sciences to understand the natural world, the ICT should be recognized as a tool and means to comprehend with the social, economic and cultural environments of currently forming information society and go hand in hand with the global environment

Information technology has its origins in the technologies related to a restricted view of information: the generation, processing and distribution of representations of information. Examples are telecommunication and computer engineering, the data processing and office machinery industries. The products of these industries still form the bulk of information technology products. Progress in recent years has been towards the extension of this 'data engineering' to an increasing range of areas of application. This has brought with it an active interest in the human aspects of information (its quality, value, utilization, etc.) or informatics. The new emphasis is reflected in, for example, a definition of information technology put forward in a recent US report, in Chartrand and Morentz(eds)(1979:121):

Information technology means the collection, storage, processing, dissemination and use of information. It is not confined to hardware and software, but acknowledges the importance of man and the goals he sets for this technology, the values employed in making these

choices, the assessment criteria used to decide whether he is controlling the technology and is being enriched by it.

A similar definition is favored by the British Advisory Council for Applied Research and Development, in Eaton and Smithers (1982:79)

The scientific, technological and engineering disciplines and the management techniques used in information handling and processing; their applications; computers and their interaction with men and machines; and associated social, economic and cultural matters.

There are a number of reasons why information technology is becoming a subject of wide-ranging discussion and study. Each of these reasons is significant on its own, but by acting together, as they are doing at the present time, they are adding urgency to the need to understand the technical and social issues involved. From a social point of view, information technology promises changes in the way we communicate and reach decisions (Zorkoczy, 1985:3). Even in its era before the computer, progress in telecommunications for example, telephone, radio and television opened out horizons for individuals and society at large, and so placed at the disposal of people information about distant events and new ideas. This has helped us to understand some of the complexities of the surrounding world, but has in turn increased that complexity by making possible a greater degree of interaction among people.

Recent technological developments in microelectronics have somewhat changed this situation by reducing the price of some data handling tools and making them more widely available. The emergence of microcomputers or personal computers (PCs) seem to have accelerated the pace of change. Manufacturers already active in the computer and telecommunication fields—the corner-stones of information.

2.6.1. IT Education and Training

On both a national and community level information technology education and training is a crucial factor in reducing exclusion from Computers. Although many basic and professional IT skills are acquired through informal means either at work or at home,

formal education remains an important component of the learning process. It is especially important for large proportion of the Ethiopian population who do not have home access or are not employed, or are employed in jobs which do not bring them into contact with computers on regular basis.

In Ethiopia, Education has traditionally been known as conservative institution, one that responds slowly to change. Consequently, computers were introduced in to education only after having played a major part in other institutions. The schools system is in a period of transitions. As Merrill(1986) indicates, reactions of educators and the public to a computer and its role as an educational tool and to supplement the traditional way of instruction are almost beginning. Some are excited, some are passive and some are annoyed, others are intimidated by the technology and apprehensive about the vast unknowns in the future of society and education. The news that computers are coming to the schools bring new hope to the students and teachers and as a whole to those engaged to the educational system.

Without a computer there is no way of thinking about Information Technology. More over; the computer is changing the workplace. Merrill points out that,there are many possibilities for future direction. As television altered our society, the computer appears to be the next prime technology is already beginning to redefine the way schooling will be conducted.

Whether this will redefine the nature of learning it self-remains to be seen. Meanwhile, (Merrill, 1986) states, as educators, we must help our students understand the nature of computers, how they work, and why they should be used for. Students whose future jobs will involve the daily use of computers can best be taught about computers by using them in a variety of ways as a regular part of their school life.

It is very difficult to make predictions for the next two or three years. Children should be taught to program or construct/instruct a computer to do something that is meaning full to them.

2.6.2 Importance of Information Technology

Anticipating the twenty-first century as one of globalization and revolution in ICT which would have significant impacts on the world of work. For instance (UNESCO, 1999) indicates that:

the emerging challenges of the twenty-first century, a century that will be an era of knowledge, information and communication. Globalization and the revolution in information and communication technology have signaled the need for a new human-centered development paradigm.

The introduction of modern information and communication technologies (ICT) to TVET delivery and testing is an important tool for enhancing access and quality in TVET and for developing life-long learning opportunities. Through ICT, training, teaching and learning can be provided at a lower cost. It supports learner-centered TVET delivery, improve access to information and knowledge and allows for self and self-paced learning and testing (National TVET strategy, 2006: 26).

UNESCO(2004),indicates that technology has great potential to support the education and training of the workforce prior to labour market entry, and as a part of lifelong learning. Technology mediated learning – the use of computers and other information technologies as an integral part of the learning process – is gaining ground through such applications as computer-based instruction, Internet-based instruction, and other methods of customized learning. Information technology potentially allows access to instructional materials any time, any place.

A computer is a versatile machine. It is difficult to find an area where computers are not being used. All other machines like television or a typewriter do the one thing they are designed for. Unlike such machines, a computer can be used to play music, watch films, type letters, send faxes, diagnose illnesses, design buildings and bridges etc.

2.6.3 IT and Computer Networks

The purpose of digital networks is to interconnect computers and other devices, which work with computer-coded data, so that data can be transferred from one location to another. As far as the user of information technology is concerned, data networks operate 'behind the scenes,' but they exert a profound influence on the application of information technology. For example, access to remote information systems, the operation of electronic mail, and increasingly, the world's telecommunication services are all dependent on the transmission of digital data through, networks.

When computers are networked in a laboratory, students are able to share ideas, views data etc. Students are able to be involved in group discussion and group works through the network. Hence, promote the new approach of education in Ethiopia, the active teaching learning process.

2.6.4. The Internet

The Internet is all about communication. The Internet is not a thing out there nobody owns it; nobody controls it; it is all over the place in general, but it is no place in particular. The internet is a people conversing with one another, and people using navigation programs and searching devices to find information. It is an international, cross-cultural society, based on the electronic communication of millions of people around the world, all talking at the same time- the greatest single conversation that has ever taken place. (Chin, 2004)

The Internet is the global connection of computers in the world. It is the network of networks around the world. In short, Internet is the interconnection of so many computers around the world. The Internet enables students to extract resources, to read any book from any library in the world provided the resources are connected to the network of the networks (the internet).

Among many, E-learning is one of the facilities of the Internet. Learning is facilitated and

supported through the use of information and communication technology, E-learning can cover a spectrum of activities from supported learning, to blended learning (the combination of traditional and E-learning practices), and to learning that is entirely online.

E-learning is no longer simply associated with distance or remote learning, but forms part of a conscious choice of the best and most appropriate ways of promoting effective learning.

E-learning, therefore, is an approach to facilitate and enhance learning through both computer and communication technology. Such devices can include personal computers, CDROMS, Television, and Mobile phones. Communication Technology enables the use of the Internet, e-mail, discussion forums, collaborative software, classroom management software and team learning systems. (Mark Poster, 1995)

Electronic mail (E-mail) is another facility of the internet primarily an alternative to the conventional postal mail service. Additionally, it offers a range of new features based on the storing and processing abilities of computers.

The concept of electronic mail covers a broad spectrum of systems and services whose main common feature is that the messages are converted to electronic signals for the purposes of transmission. Thus the notion of paper as the medium of the message is discarded, and paper is not even considered to be necessary, in some systems, as the starting and final forms (Eilean, 1997).

2.6.5 ICT and the Developing Worlds

Studies show that in the year 2002, the total number of PCS in the world passed the one billion mark and is expected to reach two billion by 2008. In the richer parts of the world, such as Western Europe and the USA, nearly everybody has a home computer (semhahegne and Mulugeta, 2006: 46).

They stated that , in developing countries, there are still very few computers and very low internet connectivity. Now Ethiopia is considered to be one of the leading countries in Africa in introducing Internet technology.

2.6.6 Future trends of IT development and use

Computers are changing the way that people live their lives. They are becoming more powerful and even smaller in size than before. This means that computers are not just something that we use for work or for pleasure, but that they are becoming part of our existence. For example, a recent survey by America's biggest Internet Source provider AOL showed that, American children believe that they will not have teachers in the future, but robots instead. (Semlahegne and Mulugeta, 2006:45)

In home, computer technology is developing, so that many jobs such as cleaning and cooking can be made easier through computers. perhaps in the future all these jobs will be done by computer, leaving more time to enjoy themselves.

In the workplace, many things are done with the help of computers already one large change that has happened, is many people are working from home. In the future, perhaps people will not have to go to work at all. Instead, computers will allow them to work in a virtual office from their house.

Nobody really knows what will happen in the future, because of all this technology; but it is interesting to think about. (Semhahegne and mulugeta, 2006)

CHAPTER 3

PRESENTATION AND ANALYSIS OF THE DATA

This part of the thesis deals with presentation, analysis and interpretation of the data gathered from the sample teachers and students. The data obtained through questionnaires and observation checklist and documents were analyzed and interpreted. Hence, the basic questions raised in the preceding chapter one were given appropriate treatment.

Out of the total of 150 questionnaires distributed to IT teachers and IT students in government TVET colleges, 127 (84.67%) were filled and returned. On the other hand, from the total of 375 questionnaires distributed to IT teachers and students in private TVET training colleges, 325(86.67%) were filled and returned. Based on the responses obtained from the sample respondents, the analysis and interpretation of the data are presented following each table.

3.1 Characteristics of Respondents

Table 3.1 Characteristics of Teacher Respondents

No	Items	Respondents Form			
		Government colleges		Private Colleges	
		No	%	No	%
1	<u>Sex</u>				
	✓ Male	16	76.19	63	84.00
	✓ Female	5	53.81	12	16.00
	Total	21	100	75	100
2	<u>Service Year</u>				
	✓ Below two years	5	23.80	23	30.67
	✓ 2-5 years	3	14.27	32	42.67
	✓ 6-10 years	6	28.60	19	25.33
	✓ Above 10 years	7	33.33	1	1.33
	Total	21	100	75	100
3	<u>Age</u>				
	✓ 20 –30 years	7	33.33	55	73.33
	✓ 31-40 Years	6	28.57	13	17.33
	✓ 41-50 Years	4	19.05	5	6.67
	✓ 50 years and above	4	19.05	2	2.67
	Total	21	100	75	100
	<u>Qualification</u>				
4	✓ Diploma	4	19.05	7	9.33
	✓ B.A/B.Sc	17	80.95	42	56.00
	✓ M.A/M.Sc	-	-	24	32.00
	✓ Ph.D	-	-	2	2.67
	✓ Others	-	-	-	-
	Total	21	-	75	100

Table 3.2 Characteristics of Student Respondents

No	Items	Respondents Form															
		Government Colleges								Private Colleges							
		10+1		10+2		10+3		Total		10+1		10+2		10+3		Total	
		No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Sex																
	• Male	23	67.6	13	62	33	64.7	69	65.1	53	65.4	50	67.6	62	65.3	165	66.00
	• Female	11	32.4	8	38	18	35.3	37	34.9	28	34.6	24	32.4	33	34.7	85	34.00
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
2	Age																
	• 14 –18 years	23	67.6	14	66.7	35	68.6	72	67.9	32	39.5	28	37.8	37	38.9	97	38.80
	• 19-25 Years	11	32.4	7	33.3	16	31.4	34	32.1	49	60.5	46	62.2	58	61.1	153	61.20
	• 26-30 Years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	• 31-35 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
3	Students' level of education prior to joining the college																
	Grade10 complete	34	100	21	100	51	100	106	100	46	56.80	42	56.80	54	56.80	142	56.80
	Grade 12 complete	-	-	-	-	-	-	-	-	35	43.20	32	43.20	41	43.20	108	43.20
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

As shown in item 1 of Table 3.1, majority of IT teachers from the government colleges 16(76.2 %) as well as Private colleges 63(84 %) were found to be males. Similarly, as can be seen from item 1 of Table 3.2, 69(65.1%) of IT students from the government colleges and 165(66 %) of the students from Private colleges were registered males. This may indicate that the participation of female teachers and students in training and education system mainly at the college level is low. Consequently, the responses of the teachers and students in this study from both government and Private TVET training colleges represent chiefly males' ideas.

As to service year of teachers, as can be seen from item 2 of Table 3.1, the majority of respondents 13(61.9 %) of IT teachers from government colleges served above six years. Whereas, IT teachers of private colleges, about 55(73.4 %) served below six years. Here it can be deduced that most of the government college teachers might have better experiences than teachers of private colleges that enable them in dealing with the training programs of their respective colleges more likely to understand various issues pertaining to the training program of their respective colleges.

Regarding age aspect, as can be seen from items 3 of Table 3.1, 14(66.67%) of IT teacher respondents from government colleges were in the range of 31-40 years old and above. On the other hand, the majority of respondents 55(73.33%) of IT teachers from private TVET colleges were below 31 years old. Here the most likely assumptions that can be inferred from the analysis is that the availability of more aged and matured teachers were found in government TVET colleges and young teachers found in private TVET colleges.

Regarding the age composition of the students, as shown in Table 3.2 of item 2, majority 72(67.9%) of the respondents from sample government colleges were 14-18 years old. On the other hand, more than half of the students from private training colleges i.e, 153 (61.2 %) were in the age range of 19-25 years old and above. From this it can be inferred that the student respondents from private training colleges were relatively older than the students from government TVET colleges. And the most probable reason is due to late

entry of private college students.

Concerning qualification of IT teachers in private TVET colleges, as shown in item 4 of Table 3.1, 2(2.7%) had Ph.D and 24(32%) had M.A/M.Sc. Besides, there were also teachers, 42(56%) having B.A/B.Sc and the rest 7(9.3%) were diploma holders. Whereas, in government TVET colleges, 17(80.9%) had B.A/BSc and the remaining 4(19.1%) were diploma holders. There were no IT teachers found in government TVET colleges having qualification MA/M.Sc and above. Therefore it is possible to deduce that private colleges seem to have better staff composition by qualification that ranging from diploma to Ph.D degrees.

With regard to students level of education prior to joining the college, Table 3.2, Item 3, reveals that majority 142(56.8 %) of the students from the private colleges were students who completed general secondary education (Grade 10). The rest 108(43.2%) of IT students in private colleges were who completed Graded 12. Whereas, all of the students of the sample government colleges were students who had completed general secondary education. From the above data, it could be realized that all the students from government colleges were students who completed grade 10. Whereas, the students joined private TVET colleges were students who completed grade 10 and 12.

With regard to refresher courses, both teachers from government and private colleges were requested to give their opinions whether they had attended any refresher /in-service trainings recently that would help them to deal with the training programs more effectively. On the basis of the reply, 13(61.9%) of IT teachers from government colleges agreed that they had attended in-service trainings. Whereas, from private TVET colleges only 17(22.7%) of IT teachers agreed that they had taken refresher trainings. Therefore, it is possible to deduce that government colleges seem to be better in providing in-service training for their respective teachers.

Both teachers from government and private were asked to specify the major areas of their specialization. With regard to this, as the information obtained shows 67(89.3%) of IT teacher respondents from the private colleges, the major areas of their specialization is

related to Information Technology. Whereas, from government TVET colleges only 6(28.6%) of IT teacher respondents have qualification related to Information Technology. This reveals that most of IT teachers in government TVET colleges have graduated from other disciplines other than Computer Science, Information Technology or Electrical Computer Engineering.

3.2. Responses Relevant to the Study

Table 3.3 Teachers' Views whether there are IT courses that were not properly delivered. "Yes" or "No" answer.

Responses	Government colleges		Private colleges	
	No.	%	No.	%
Are there IT courses which were not properly delivered ?				
A) Yes	17	80.95	20	26.67
B) No	4	19.05	55	73.33
Total	21	100	75	100

Table 3.4 Students' views whether there are IT courses that were not properly delivered. "Yes" or "No" answer.

Responses	Government colleges								Private colleges							
	10+1		10+2		10+3		Total		10+1		10+2		10+3		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Are there IT courses which were not properly delivered?																
A) Yes	7	20.6	6	28.6	35	68.6	48	45.3	9	11.1	23	31.1	49	51.6	81	32.4
B) No	27	79.4	15	71.4	16	31.4	58	54.7	72	88.9	51	68.9	46	48.4	169	67.6
Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

Both teachers and students from the government and private colleges were asked whether there are IT courses that were not properly delivered. As shown in Table 3.3, a remarkable percent 17(80.9%) of teacher respondents from the government colleges and few percent 20(26.7%) of teacher respondents from private colleges responded "yes". We see that, there is a significant percentage difference between the two groups of respondents, regarding the existence of some courses that were not properly delivered. However, the problem of existence of some courses, which were not properly treated, seemed much worse in government colleges than that of private colleges. According to the government college respondents, some of the courses such as Multimedia and Advanced Maintenance are among the courses that were not properly delivered due to lack of skilled and qualified teachers. And the private college teacher respondents specified that a course named " Introduction to computers and Basic Application" was not properly delivered due to shortage of training time.

As regard to student respondents views whether there are IT courses which were not properly delivered, 58(54.7%) of students from government colleges and 169(67.6%) from private colleges responded "No" and the rest responded "yes", which seems in contrast to the responses of teachers. (Refer Table 3.4) This is because from both types of colleges most of 10+1 and 10+2 students might not be aware of IT courses that were not properly delivered. However, 35(68.6%) of 10+3 student respondents from government colleges and 49(51.6%) of 10+3 student respondents from private colleges indicated that there are IT courses which were not properly delivered. As the student respondents from both colleges specified, such as Multi-media, Maintenance, Networking and Internet are some among the courses which were not properly delivered.

Table 3.5 Responses of Teachers on Adequacy of Teachers, Students and Supportive Staffs.

No	Responses	Government colleges		Private colleges	
		No.	%	No.	%
1	Availability of teachers with necessary skills and educational qualification.				
	a) Very good	2	9.52	17	22.67
	b) Good	3	14.29	37	49.33
	c) Moderate	2	9.52	7	9.33
	d) Poor	11	52.38	9	12.00
	e) Very poor	3	14.29	5	6.67
Total		21	100	75	100
2	Adequacy of supportive staff with the required level of education.				
	a) Very good	1	4.76	5	6.67
	b) Good	2	9.52	37	49.33
	c) Moderate	5	23.80	18	24.00
	d) Poor	9	42.86	12	16.00
	e) Very poor	4	19.05	3	4.00
Total		21	100	75	100
3	The number of instructors and training facilities as compared to the number of trainees.				
	a) Very good	-	-	21	28.00
	b) Good	3	14.29	35	46.67
	c) Moderate	7	33.33	13	17.33
	d) Poor	8	38.10	6	8.00
	e) Very poor	3	14.29	-	-
Total		21	100	75	100

Table 3.6 Responses of Students on Adequacy of Teachers, Students and Supportive staffs.

No.	I. Responses	Government colleges								Private colleges							
		10+1		10+2		10+3		Total		10+1		10+2		10+3		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Availability of teachers with necessary skills and educational qualification																
	a) Very good	6	17.65	2	9.52	5	9.80	13	12.6	17	20.99	12	16.22	15	15.79	44	17.60
	b) Good	7	20.60	3	14.30	9	17.65	19	17.91	36	44.44	31	41.89	48	50.53	115	46.00
	c) Moderate	9	26.47	6	28.57	16	31.37	31	29.24	12	14.82	27	36.49	23	24.21	62	24.80
	d) Poor	9	26.47	8	38.10	21	41.18	38	35.85	13	16.05	4	5.41	7	73.68	24	9.60
	e) Very poor	3	88.23	2	9.52	-	-	5	4.71	3	3.70	-	-	2	2.11	5	2.00
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
2	Adequacy of supportive staff with the required level of education																
	a) Very god	8	23.53	-	-	2	3.92	10	9.43	13	16.05	13	17.57	17	17.89	43	17.20
	b) Good	11	32.35	2	9.52	4	7.84	17	16.03	27	33.33	34	45.95	41	43.16	102	40.80
	c) Moderate	5	14.71	8	38.10	17	33.33	30	28.30	17	20.99	22	29.73	25	26.32	64	25.6
	d) Poor	8	23.53	9	42.86	23	45.10	40	37.73	16	19.75	3	4.05	5	5.26	24	9.60
	e) Very poor	2	5.88	2	9.52	5	9.80	9	8.49	8	9.88	2	2.70	7	7.37	17	6.80
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
3	The number of instructors and training facilities as compared to the number of trainees.																
	a) Very good	5	14.71	2	9.52	5	9.80	12	11.30	-	-	17	22.97	32	33.69	62	24.80
	b) Good	4	11.77	3	14.30	4	7.84	11	10.40	37	45.68	27	36.49	45	47.37	109	43.6
	c) Moderate	2	5.88	3	14.30	11	21.57	16	15.10	23	28.40	21	28.38	11	11.58	55	22.00
	d) Poor	18	52.94	9	42.86	22	43.14	49	46.20	6	7.41	8	10.81	5	5.26	19	7.60
	e) Very poor	5	14.71	4	19.05	9	17.65	18	17.00	2	2.47	1	1.35	2	2.11	5	2.00
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

Table 3.7 Summary Table of One-way ANOVA on Availability of Teachers and Supportive Staff with the Necessary skills & Qualification

No	Items	Respondents	Statistical Comparism		
			No	Mean	S.D
1	Availability of teachers with necessary skills and educational qualification.	Teacher respondents			
		Government College	21	2.5238	1.20909
		Private College	75	3.6933	1.15048
		Total	96	3.4375	1.25499
		Student respondents			
		Government College	106	2.9717	1.10804
		Private College	250	3.6760	0.94158
		Total	356	3.4663	1.04355
2	Adequacy of supportive staff with the required level of education	Teacher respondents			
		Government College	21	2.3810	1.07127
		Private College	75	3.3867	0.97111
		Total	96	3.1667	1.07279
		Student respondents			
		Government College	106	2.8019	1.10772
		Private College	250	3.5200	1.09471
		Total	356	3.3062	1.14526
3	The number of instructors as compared to the number of students.	Teacher respondents			
		Government College	21	2.4762	0.92839
		Private College	75	3.9467	0.88369
		Total	96	3.6250	1.07850
		Student respondents			
		Government College	106	2.5283	1.22052
		Private College	250	3.8160	0.96012
		Total	356	3.4326	1.19786

N.B: All ANOVA tests throughout this paper are computed at a significant level of 0.05

As depicted in item 1 of table 3.5 and item 1 of Table 3.6, only 5(23.81%) of teacher respondents and 32(30.11%) of student respondents from government colleges responded the availability of qualified teachers in their colleges. Whereas, the majority 39(52%) of teacher respondents and 159(63%) of student respondents from the private colleges agreed the availability of qualified teachers in their colleges. From the above data it could be realized that private TVET colleges have significantly more qualified IT teachers than government TVET colleges.

With regard to the supportive staffs, as depicted in item 2 of Table 3.5, only 3(14.28%) of IT teachers from government colleges responded on the adequacy of administrative staffs with the required level of education. Whereas, a noticeable number of teacher respondents, i.e 42(56%) from private TVET colleges confirmed that private colleges have adequate number of administrative staff with the required level of education to enhance and facilitate the training program of their respective colleges.

As can be seen from Table 3.6, as students responded it, there is less number of administrative staff than it should be in government TVET colleges.

As shown in Table 3.6, 145(58%) of student respondents from private TVET colleges responded that, their colleges have a larger number of supportive staff to support the academic activities of the training program. More specifically there is significantly more qualified number of administrative staff in private colleges than government TVET colleges.

In general, as can be seen from item 2 of Table 3.7, the result of one-way ANOVA indicates(see Appendix 4), government colleges run their activities under unqualified and inadequate number of supportive staff that might be gradually resulted in hindering the proper functioning of the colleges under the study.

Regarding the number of instructors and training facilities as compared to the number of students, as shown in Table 3.5 of Item3, a remarkable number 56(74.67%) of teacher

respondents from the private colleges and 3(14.29%) of teacher respondents from the government TVET colleges responded the adequacy of instructors and training facilities as compared to the number of trainees.

Similarly, the majority 171(68.4%) of student respondents from the private TVET colleges and 23(21.7%) of student respondents from the government TVET colleges responded the adequacy of instructors and training facilities as compared to the number of trainees.

Moreover, as can be observed from item 3 of Table 3.7, the one-way ANOVA result shows that, private colleges have adequate number of teachers and training facilities as compared to that of government TVET colleges. Besides, teacher and students respondents themselves from government colleges asserted that they have no adequate number of teachers as compared to the number of students by rating the issue below the average. (See Appendix 3)

The above information shows that, better and above the average quality is found in private TVET colleges when compared with the number of students enrolled in their respective training colleges. It was also observed by the researcher that there were more number of training facilities available in the private colleges to promote the training program in the given sample colleges than was appearing in the government TVET colleges.

Table 3.8 Responses of Teachers on Quality and Adequacy of Training Facilities

No	Responses	Government colleges		Private colleges	
		No.	%	No.	%
1	Classroom condition.				
	a) Very good	6	28.57	19	25.33
	b) Good	11	52.38	37	49.33
	c) Moderate	2	9.52	16	21.33
	d) Poor	2	9.52	3	4.00
	e) Very poor	-	-	-	-
Total		21	100	75	100
2	Quality of Computer laboratories.				
	a) Very good	1	4.80	21	28.00
	b) Good	7	33.33	47	62.67
	c) Moderate	-	-	3	4.00
	d) Poor	10	47.61	4	5.00
	e) Very poor	3	14.29	-	-
Total		21	100	75	100
3	Adequacy and up-to- datedness of computers.				
	a) Very good	2	9.52	19	25.33
	b) Good	3	14.29	38	50.67
	c) Moderate	5	23.81	9	12.00
	d) Poor	11	52.38	7	9.33
	e) Very poor	-	-	2	2.67
Total		21	100	75	100
4	Availability of Hardware Technicians in the college.				
	a) Very good	11	52.38	43	57.33
	b) Good	7	33.33	17	22.67
	c) Moderate	-	-	10	13.33
	d) Poor	3	14.29	5	6.67
	e) Very poor	-	-		
Total		21	100	75	100
5	Maintenance of computers that need fixing.				
	a) Very good	4	19.05	21	28.00
	b) Good	3	14.29	39	52.00
	c) Moderate	-	-	10	13.33
	d) Poor	12	57.14	5	6.67
	e) Very poor	2	9.52	-	-
Total		21	100	75	100

No	Responses	Government colleges		Private colleges	
		No.	%	No.	%
6	The extent in which the computers in the laboratories are networked				
	a) Very good	-	-	20	26.67
	b) Good	1	4.80	41	54.67
	c) Moderate	3	14.29	7	9.33
	d) Poor	13	61.9	5	6.67
	e) Very poor	4	19.05	2	2.67
Total		21	100	75	100
7	Availability of Internet services to students				
	a) Very good	7	33.33	16	21.30
	b) Good	-	-	36	48.00
	c) Moderate	-	-	13	17.33
	d) Poor	14	66.67	8	10.67
	e) Very poor	-	-	2	2.67
Total		21	100	75	100
8	The extent of availability relevant and up-to-date references and textbooks in the library (Hardcopy and softcopy)				
	a) Very good	-	-	5	6.67
	b) Good	3	14.29	4	5.00
	c) Moderate	3	14.29	18	24.00
	d) Poor	11	52.38	37	49.33
	e) Very poor	4	19.05	11	14.67
Total		21	100	75	100
9	Supplies, stationeries, accessories for laboratory works				
	a) Very good	-	-	19	25.33
	b) Good	5	23.81	37	49.33
	c) Moderate	-	-	12	16.00
	d) Poor	12	57.14	7	9.33
	e) Very poor	4	19.05	-	-
Total		21	100	75	100
10	Time allotted for practical aspects of training				
	a) Very good	-	-	5	6.67
	b) Good	4	19.05	20	26.67
	c) Moderate	-	-	-	-
	d) Poor	12	57.14	40	53.30
	e) Very poor	5	23.81	10	13.33
Total		21	100	75	100

With regard to the classroom condition as shown in item 1 of Table 3.8 majority 11(52.38%) of teacher respondents from the government TVET college responded "good" to indicate that their college classroom conditions are in a good position for the proper functioning of the training programs to take place. Likewise, considerable number 37(49.33%) of teacher respondents from the private TVET colleges responded "good" to indicate that their colleges classroom conditions are also in a good position. However, teachers from both types of colleges rated the condition of classrooms of their training colleges above the average even if it was rated higher in government TVET colleges than private training colleges. Any how, in generally speaking, the conditions of classrooms of private training colleges was not in a worse condition and as such there was also no sever shortage as it was observed by the researcher himself.

Concerning the overall conditions of computer laboratories, as shown on item 2 of Table 3.8, 47(62.67%) of teacher respondents from the private colleges and 10(47.61%) of teacher respondents from the government colleges responded " good" and " poor" respectively. From this, we can see that teacher respondents confirmed the condition of computer laboratories relatively in a better position in private colleges than government colleges as significantly rated above the average by respondents.

Respondents were also requested to rate the modernness and adequacy of computers. With regard to this, as depicted in item 3 of Table 3.8, 11(52.38%) of teacher respondents from the government colleges and noticeable number 38(50.67%) of teacher respondents from the private TVET colleges responded "poor" and "good" respectively.

Regarding availability of hardware technicians, as shown in item 4 of Table 3.8, 11(52.38%) of teacher respondents from the government TVET colleges and 43 (57.33%) of teacher respondents from private TVET colleges both answered " good" to indicate that hardware technicians were available to maintain failed/ damaged computers.

Teacher respondents from government and private TVET colleges were asked to rate the extent to which computers in laboratories are networked. With regard to this, as can be seen from item 6 of Table 3.8, 13(61.9%) of teacher respondents from government TVET Colleges responded "poor". While 41(54.67%) of teacher respondents from private colleges answered "good" to indicate that the network of the computers in the laboratories was relatively in a better position in private colleges than government colleges.

With regard to availability of Internet services to students as can be seen from item 7 of Table 3.8, 14(66.67%) of teacher respondents from government colleges responded "poor". Whereas, a considerable number, 36(58%) of teacher respondents from private colleges answered "good" to indicate that the provision of Internet services were better in private colleges than government colleges.

Regarding relatedness and up-to- datedness of references as well as textbooks in the library, as can be seen from item 8 of Tables 3.8, 11(52.38%) of teacher respondents from the government colleges and 37(49.33%) of teacher respondents from private colleges both responded "Poor" to indicate that the relatedness and up-to-datedness of the reference books found in their respective college libraries were below the average.

With regard to the provision of supplies and stationeries, an attempt was made to investigate the extent of availability and adequacy of these materials in both types of colleges. Accordingly, as can be seen from item 9 of Table 3.8, 12(57.14%) of teacher respondents from the government colleges responded "poor" to indicate that the availability of supplies and stationeries were minimal. Whereas, 37(49.33%) of teacher respondents from private colleges responded "good" to indicate that the availability of supplies and stationeries for the purpose of the training program was relatively better in private colleges than government colleges.

The above information shows that both types of colleges faced the problem of supplies and stationeries for laboratory works as responded by the teachers from both government and private TVET colleges. It can be understood that inadequate amount of supplies and stationeries were provided in both types of colleges, though private TVET colleges were better in this regard.

As can be seen from item 10 of Table 3.8, 12(57.14%) of teacher respondents from the government colleges and 40(53.3%) of teacher respondent from the private colleges both answered " poor" to indicate that the training was more of theoretical.

It can be concluded from the analysis of the finding that the time allotted for practical aspects of training was not sufficient enough in both types of colleges. However in relatively speaking, the emphasis given to the practical aspect of the training was better in private colleges than in government TVET colleges.

Table 3.9 Responses of Students on Quality and Adequacy of Training Facilities

No.	Responses	Government colleges								Private colleges							
		10+1		10+2		10+3		Total		10+1		10+2		10+3		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Classroom condition.																
	a) Very good	5	14.71	3	14.29	13	25.49	21	19.81	16	19.75	15	20.27	25	26.32	56	22.40
	b) Good	16	47.06	13	61.91	26	50.98	55	51.87	40	49.38	38	51.35	55	57.90	133	53.20
	c) Moderate	2	5.88	5	23.80	9	17.65	16	15.10	19	23.46	12	16.22	11	11.58	42	16.80
	d) Poor	11	32.35	-	-	3	5.88	14	13.21	6	7.41	9	12.16	4	4.21	19	4.80
	e) Very poor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
2	Quality of Computer laboratories.																
	a) Very good	-	-	-	-	45	88.24	45	42.45	-	-	18	24.32	5	5.26	23	9.20
	b) Good	-	-	-	-	6	11.76	6	5.66	10	12.35	24	32.43	90	94.74	124	49.60
	c) Moderate	-	-	-	-	-	-	-	-	5	6.17	4	5.41	-	-	9	3.60
	d) Poor	32	94.11	20	95.24	-	-	52	49.06	65	80.24	27	36.49	-	-	92	36.80
	e) Very poor	2	5.89	1	4.76	-	-	3	16.04	1	1.24	1	1.35	-	-	2	0.80
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
3	Adequacy and up-to-modernness of computers.																
	a) Very good	-	-	-	-			-	-	7	8.64	5	6.76	11	11.58	23	9.20
	b) Good	-	-	-	-	7	13.73	7	6.60	9	11.11	6	8.11	30	31.58	45	18.00
	c) Moderate	-	-	-	-	6	11.77	6	5.66	5	6.17	2	2.71	5	5.26	12	4.80
	d) Poor	14	41.18	9	42.86	38	74.50	61	57.55	47	58.03	42	56.76	40	42.11	129	51.60
	e) Very poor	20	58.82	12	57.14	-	-	32	30.19	13	16.05	19	25.68	9	9.47	41	16.40
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

No.	Responses	Government colleges								Private colleges							
		10+1		10+2		10+3		Total		10+1		10+2		10+3		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
4	Time allotted for practical aspects of training works.																
	a) Very good	-	-	-	-	-	-	-	-	-	-	-	-	4	4.21	4	1.60
	b) Good	3	8.82	2	9.52	2	3.92	7	6.60	22	27.16	10	13.51	-	-	32	12.80
	c) Moderate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	d) Poor	16	47.06	8	38.10	8	15.69	32	30.19	42	51.85	50	67.57	63	66.32	155	62.00
	e) Very poor	15	44.12	11	52.38	41	80.39	67	63.20	17	20.99	14	18.92	28	29.47	59	23.60
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
5	The extent to which failed/damaged computers are maintained.																
	a) Very good	-	-	-	-	-	-	-	-	2	2.46			21	22.10	23	9.20
	b) Good	-	-	-	-	2	3.92	2	1.88	26	32.10	35	47.30	67	70.52	128	51.20
	c) Moderate	-	-	-	-	-	-	-	-	3	3.70	-	-	-	-	3	1.20
	d) Poor	15	44.12	8	38.09	20	39.22	43	40.57	43	53.10	21	28.38	7	7.38	71	28.40
	e) Very poor	19	55.88	13	61.91	29	56.86	61	57.55	7	8.64	18	24.32	-	-	25	10.00
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

6	Availability of Internet service to students.																
	a) Very good	-	-	-	-	51	100	51	48.11	-	-	17	22.97	7	7.37	24	9.60
	b) Good	-	-	-	-	-	-	-	-	2	2.47	43	58.11	85	89.47	130	52.00
	c) Moderate	-	-	-	-	-	-	-	-	9	11.11	2	2.70	-	-	11	4.40
	d) Poor	3	8.83	6	28.57	-	-	9	8.49	47	58.82	8	10.81	1	1.05	56	22.40
	e)Very poor	31	91.17	15	71.43			46	43.40	23	28.40	4	5.41	2	2.11	29	11.6
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
7	The extent to which related and up-to-dated references and text books in the library. (Hard copy and Soft copy)																
	a) Very good	-	-	-	-	-	-	-	-	7	8.64	9	12.16	3	3.16	19	4.80
	b) Good	4	11.77	-	-	-	-	4	3.77	38	46.91	35	47.30	23	24.21	96	38.40
	c) Moderate	-	-	3	14.29	17	33.33	20	18.87	2	2.46	-	-	2	2.11	4	1.60
	d) Poor	24	70.59	13	61.91	22	43.14	59	55.66	27	33.33	24	32.43	62	65.26	113	45.20
	e)Very poor	6	17.65	5	23.80	12	23.53	23	21.76	7	8.64	6	8.11	5	5.26	18	7.20
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

Table 3.10 Summary Table of one-way ANOVA on Quality and Adequacy of Training Facilities.

No	Items	Respondents	No	Mean	S.d
1	Classroom condition	Teacher respondents			
		Government college	21	4.0000	0.89
		Private college	75	3.9600	0.79594
		Total	96	3.9688	0.81374
		Student Respondents			
		Government College	106	3.7840	0.91552
		Private college	250	3.9040	0.83039
		Total	356	3.8680	0.85711
2	Quality of computer laboratories	Teacher respondents			
		Government college	21	2.6667	1.23828
		Private college	75	4.1333	0.72286
		Total	96	3.8125	1.04944
		Student Respondents			
		Government College	106	3.3585	1.50040
		Private college	250	3.2960	1.08679
		Total	356	3.3146	1.22275
3	Adequacy and modernness of computers	Teacher respondents			
		Government college	21	2.8096	1.03049
		Private college	75	3.8667	0.99095
		Total	96	3.6354	1.08695
		Student Respondents			
		Government College	106	1.8868	0.78462
		Private college	250	2.3200	1.22294
		Total	356	2.3315	1.14681
4	Time allotted for practical aspects of training works	Teacher respondents			
		Government college	21	2.1429	1.01419
		Private college	75	2.5733	1.19880
		Total	96	2.4792	1.16961
		Student Respondents			
		Government College	106	1.5000	0.80770
		Private college	250	2.0680	0.94390
		Total	356	1.8989	0.94102
5	The extent to which failed/damaged computers are maintained	Teacher respondents			
		Government college	21	2.9048	1.44585
		Private college	75	4.0133	0.83007
		Total	96	3.7708	1.09043
		Student Respondents			
		Government College	106	1.4623	0.60434
		Private college	250	3.2120	1.23497
		Total	356	2.6910	1.34898

No	Items	Respondents	No	Mean	S.d
6	Availability of Internet service to students	Teacher respondents			
		Government college	21	3.0000	1.44914
		Private college	75	3.7467	1.00126
		Total	96	3.5833	1.14861
		Student Respondents			
		Government College	106	3.0094	1.94444
		Private college	250	3.2560	1.23798
		Total	356	3.1826	1.48526
7	The extent to which related and up-to-dated references and text books in the library(Hard copy and soft copy)	Teacher respondents			
		Government college	21	2.2381	0.94365
		Private college	75	2.3867	1.02527
		Total	96	2.3542	1.00503
		Student Respondents			
		Government College	106	2.0472	0.74810
		Private college	250	2.9400	1.19588
		Total	356	2.6742	1.15576

With regard to the classroom condition as shown in item 1 of 3.9, 55(51.87%) of student respondents from the government TVET college responded "good" to indicate that their college classroom conditions are in a good position for the proper functioning of the training programs to take place. Likewise, respondents and 133(52.20%) of student respondents from the private TVET colleges responded "good" to indicate that their colleges classroom conditions are also in a good position.

As shown on Item 2 of Table 3.9, 124(49.6%) of student respondents from the private colleges and 52(49.06%) of student respondents from the government TVET colleges responded " good" and " poor" respectively. From the finding obtained, it is possible to deduce that computer laboratories are relatively in a better conditions in private TVET colleges than government TVET colleges.

However, when closely examined, there was a significant difference among the responses of 10+1, 10+2 and 10+3 students in both types of colleges regarding the conditions of computer laboratories.

To show these differences, 32(94.1%) of 10+1 student respondents and 20(95.24%) of

10+2 students respondents from the government respective college responded "poor" to indicate that their respective college computer laboratories are in a worse conditions. On the contrary, 45(88.24%) of 10+3 student respondents from the government colleges responded " good" to indicate that their colleges' computer laboratories are in better conditions.

Similarly, 65(80.24%) of 10+1 student respondents from the private colleges responded "poor" to indicate that their colleges computer laboratories are in a worse conditions. While 90(94.74%) of 10+3 student respondents from the private colleges answered " good" to indicate that their colleges computer laboratories are in better conditions.

From the above it can be inferred that 10+3 IT students were taught in a better conditioned laboratories in both types of colleges. On the contrary, 10+1 and 10+2 IT students in government colleges and 10+1 IT students in private TVET colleges were taught in a worse conditioned laboratories.

Respondents were also requested to rate the modernness and adequacy of computers. With regard to this,as depicted in item3 of Table 3.9 , 61(57.55%) of student respondents from the government TVET colleges and 129(51.6%) of student respondents from the private colleges both answered "poor".

Moreover, as can be seen from item 3 of Table 3.10, both teacher and student respondents from the government colleges rated below the average regarding the adequacy and modernness of computers in their colleges.

On the other hand, as shown in item 3 of Table 3.10,teacher respondents from the private colleges rated above the average concerning the adequacy and modernness of the computers in their colleges. On the contrary, student respondents from private training colleges rated below the average regarding the adequacy and modernness of the computers in their colleges. Thus, teachers and students differ in opinion on the issue raised

concerning adequacy and modernness of computers in private colleges. Any how, the modernness and adequacy of computers in private TVET colleges was not in a worse condition and above all, the up-to-datedness and adequacy of the computers that go in line with the number of students enrolled is relatively better in private TVET colleges than government TVET colleges as it was observed by the researcher himself.

From the above it can be inferred that, the adequacy and modernness of the computers are likely to be said not as it was supposed to be in both types of colleges. However, in relatively speaking, the up-to-datedness and adequacy of computers that are found significantly better or comparatively adequate and modern computers available in private colleges.

Concerning the time allotted for practical aspects of training, as shown in item 4 of Table 3.9, considerable number 67(63.20%) of student respondents from the government colleges and 155(62%) of student respondents from private colleges responded "very poor" and "poor" respectively.

It can be concluded from the analysis of the finding that the time allotted for practical aspects of training was not sufficient enough in both types of colleges. However in relatively speaking, the emphasis given to the practical aspect of the training was better in private colleges than in government TVET colleges.

As shown in item 7 of Table 3.9, 59(55.66%) of student respondents from the government colleges and 113(45.20%) of student respondents from the private colleges responded "poor" to indicate the reference books found in their respective college libraries were not latest.

It can be concluded from the analysis of the finding that library books are likely to be said not latest in both types of colleges. However, in relatively speaking, the qualities of books that are found significantly better or comparatively latest reference books available in private colleges.

Regarding maintenance of computer that need fixing, as shown in item 5 of Table 3.9, 128(51.20%) of student respondents from the private colleges answered "good" to indicate that failed computers were properly maintained on time. Whereas, 61(57.55%) of student respondents from government colleges endorsed the problem regarding the issue of fixing damaged computers was "poor".

In general, as can be seen from item 5 of Table 3.10, the result of one-way ANOVA indicates, private training colleges had no a problem of maintaining failed computers as compared to that of government TVET colleges. The problem of fixing damaged computers for the betterment of the training purpose in government colleges perhaps which resulted from inability of the technicians or from poor budget management practices that observed in such colleges.

As can be seen from item 6 of Table 3.9, 130(52%) of student respondents from the private training colleges responded "good". Where as, 47(58.82%) of student respondents from the government TVET colleges responded " poor" to indicate that the provision of Internet services to students in government colleges was very low as compared to that of the private colleges.

However, when closely examined there was a significant difference among the responses of 10+1, 10+2 and 10+3 students in both types of colleges regarding the provision of Internet services to students.

To show these differences, as can be seen from item 6 of Table 3.9, 31(91.17%) of 10+1 and 15(71.43%) of 10+2 student respondents from the government colleges responded "very poor" to indicate that no Internet services to 10+1 and 10+2 students at all. On the contrary, 51(100%) of 10+3 student respondents from the government colleges responded "very good" to indicate that Internet services were provided to 10+3 students.

Similarly, 47(58.82%) of 10+1students respondents from private colleges responded "poor" to indicate that the provision of Internet services to 10+1 students was very low. On the other hand, 43(58.11%) of 10+2 and 85(89.47%) of 10+3 student respondents

from the private TVET colleges responded "good" to indicate that Internet services were provided to 10+2 and 10+3 students.

From the responses given by both groups from both types of colleges, it is possible to realize that sufficient internet services were provided to 10+3 IT students and almost no Internet services were provided to 10+1 and 10+2 IT students in government colleges. Likewise, the provision of Internet services to 10+3 and 10+2 students were relatively better than the Internet services given to 10+1 IT students in private TVET colleges.

In general, as can be observed from item 6 of Table 3.10, the one-way ANOVA result shows that, the provision of Internet services to IT students were relatively better in private training colleges than government TVET colleges. (See Appendix 4).

Table 3.11 Responses of Teacher on the Extent of utilization and availability of General Services

No	Responses	Government colleges		Private colleges	
		No.	%	No.	%
1	Provision of Health service (Clinic)				
	a) Very good				
	b) Good	2	9.52	12	16.00
	c) Moderate	-	-	7	9.33
	d) Poor	17	80.95	43	57.33
	e) Very poor	2	9.52	13	17.33
Total		21	100	75	100
2	Food service (Cafeteria)				
	a) Very good	-	-	-	-
	b) Good	3	14.29	4	5.33
	c) Moderate	-	-	11	14.67
	d) Poor	16	76.19	52	69.33
	e) Very poor	2	9.52	8	10.67
Total		21	100	75	100
3	Dormitory service				
	a) Very good	-	-	-	-
	b) Good	-	-	-	-
	c) Moderate	-	-	-	-
	d) Poor	-	-	-	-
	e) Very poor	21	100	75	100
Total		21	100	75	100
4	Guidance service				
	a) Very good	-	-	4	5.33
	b) Good	5	23.82	8	10.67
	c) Moderate	2	9.52	2	2.67
	d) Poor	12	57.14	44	58.66
	e) Very poor	2	9.52	17	23.67
Total		21	100	75	100
5	Road accessibility (convenient for transportation)				
	a) Very good	14	66.67	15	20.00
	b) Good	3	14.29	49	65.34
	c) Moderate	3	14.29	4	5.33
	d) Poor	1	-	7	9.33
	e) Very poor	-	4.76	-	-
Total		21	100	75	100
6	Availability of electric generator				
	a) Very good	-	-	-	-
	b) Good	-	-	6	8.00
	c) Moderate	-	-	-	-
	d) Poor	-	-	12	16.00
	e) Very poor	21	100	57	76.00
Total		21	100	75	100

Table 3.12 Responses of students on the extent of utilization and Availability of General Services.

No	Responses	Government colleges								Private colleges							
		10+1		10+2		10+3		Total		10+1		10+2		10+3		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Provision of Health service (clinic)																
	a) Very good	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	b) Good	7	2.06	2	9.52	-	-	9	8.49	4	4.94	2	2.70	3	3.16	9	3.60
	c) Moderate	5	14.71	5	23.81	3	5.88	13	12.26	20	2.47	37	50.00	11	11.58	68	27.20
	d) Poor	19	55.88	9	42.86	35	68.63	63	59.43	47	58.02	31	41.89	64	67.37	142	56.80
	e) Very poor	3	8.82	5	23.81	13	25.49	21	19.81	19	23.46	4	5.41	17	17.89	31	12.40
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
2	Food services (Cafeteria)																
	a) Very good	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	b) Good	-	-	-	-	-	-	-	-	5	6.17	17	22.97	9	9.47	31	12.40
	c) Moderate	1	2.94	2	9.52	3	5.88	6	5.66	2	2.47	6	8.11	5	5.27	13	5.20
	d) Poor	22	64.71	11	52.38	38	74.50	71	66.98	42	51.85	27	36.49	68	71.58	137	54.80
	e) Very poor	11	32.35	8	38.10	10	19.62	29	27.36	32	39.51	24	32.43	13	13.68	69	27.60
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
3	Dormitory service																
	a) Very good	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	b) Good	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	c) Moderate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	d) Poor	2	5.88	1	4.76	-	-	3	2.83	1	1.23	3	4.05	2	2.11	6	2.40
	e) Very poor	32	94.12	20	95.24	51	100	103	97.17	80	98.77	71	95.95	93	97.89	244	97.60
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100
4	Guidance service																
	a) Very good																
	b) Good	6	17.65	8	38.10	7	13.73	21	19.81	3	3.71	2	2.71	3	3.16	8	3.20
	c) Moderate	2	5.88	1	4.76	2	3.92	5	4.72	14	17.28	8	10.81	5	5.26	27	10.80
	d) Poor	21	61.76	9	42.84	33	64.70	63	59.43	53	65.43	47	63.51	78	82.11	178	71.20
	e) Very poor	5	14.71	3	14.30	9	17.65	17	16.04	11	13.58	17	22.97	9	9.47	37	14.80
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

Table 3.13 Summary Table of One-way ANOVA on the Extent of utilization and availability of General services.

No	Items	Respondents	No	Mean	S.d
1	Provision of Health service (Clinic)	Teacher respondents			
		Government college	21	2.0952	0.70034
		Private college	75	2.2400	0.92765
		Total	96	2.2083	0.088159
		Student Respondents			
		Government College	106	2.0943	0.81098
		Private college	250	2.5280	1.12351
		Total	356	2.3989	1.05798
2	Food services (Cafeteria)	Teacher respondents			
		Government college	21	2.1905	0.81358
		Private college	75	2.1467	0.67169
		Total	96	2.1563	0.70080
		Student Respondents			
		Government College	106	1.7830	0.53461
		Private college	250	2.1320	1.19679
		Total	356	2.0281	1.05579
3	Dormitory service	Teacher respondents			
		Government college	21	2.8095	0.81098
		Private college	75	2.8095	0.81098
		Total	96	2.8950	1.12351
		Student Respondents			
		Government College	106	1.0283	0.16662
		Private college	250	1.0440	0.25754
		Total	356	1.0393	0.23407
4	Guidance service	Teacher respondents			
		Government college	21	2.4762	0.98077
		Private college	75	2.1733	1.07015
		Total	96	2.2396	1.05376
		Student Respondents			
		Government College	106	2.2830	0.96367
		Private college	250	2.0240	0.62045
		Total	356	2.1011	0.74750

Regarding the health services provided to the students in the colleges, as can be seen from item 1 of Table 3.11 a remarkable portion 17(80.95%) of teacher respondents from the government colleges and 43(57.33%) of teacher respondents from the private TVET colleges both responded "poor" to indicate that the health services given to students in their respective colleges were low.

Similarly, as shown in item 1 of Table 3.12, 63(59.43%) of student respondents from the government TVET colleges and 142(56.8%) of student respondents from the private colleges both answered "poor" indicating that no proper health services were provided in their respective colleges.

It can be inferred from the analysis of the finding that the provision of health services were poor in both types of colleges. Nonetheless, as can be observed from the analysis, even if health services were not properly provided as such satisfactory in both types of colleges, the problem seemed much worse in government colleges than that of private colleges.

In connection with the provision of food services and cafeteria condition, as can be seen from item 2 of Table 3.11, 16(76.19%) of teacher respondents from the government colleges and 52(69.33%) of teacher from private colleges both responded "poor". Similarly, as shown in item 2 of Table 3.12, 71(66.98%) of student respondents from government TVET colleges and 137(54.80%) of student respondents from the private training colleges both responded "poor".

From the above, it can be concluded that the provision of food services and cafeteria conditions in both types of colleges were poor. However in relatively speaking, the provision of food services and cafeteria conditions were better in private colleges.

Concerning dormitory services, as can be seen from item 3 of Table 3.11, 100% of teacher respondents from both types of colleges responded " very poor". Similarly, as

shown in item 3 of Table 3.12, 98(92.45%) of student respondents from the government colleges and 242(96.8%) of student respondents from the private colleges both responded " very poor" to indicate that almost no dormitory services were provided in their respective colleges.

As observed in item 4 of Table 3.11, respondents from both the government and private TVET colleges under the study had almost similar opinion in relation to the provision of the guidance service for students in their respective colleges. Consequently, 12(57.14%) and 44 (58.67%) of teacher respondents from government and private colleges respectively, rated below the average the issue that pertaining to the provision of guidance service in their colleges. Similarly, as can be seen from item 4 of Table 3.12, 63(59.43%) and 178(71.20%) of student respondents from government and private colleges respectively responded "poor" to indicate that the provision of guidance services in their respective colleges were not satisfactory.

It can be inferred that, even if guidance services were not properly provided as such satisfactory in both types of colleges. The problem seemed much worse in private TVET colleges than that of government TVET colleges. Moreover, as can be observed from item 4 of Table 3.13, the result of result of one-way ANOVA indicates that the provision of guidance services were relatively better in government TVET Colleges than private TVET colleges.(See appendix 4)

Concerning road accessibility, as shown in item 5 of Table 3.11 the majority 14(66.67%) of teacher respondents from the government colleges and 49(65.33%) of teacher respondents from the private TVET colleges responded " very good" and "good" respectively.

From the finding obtained, it is possible to say that both types of colleges either the government or private training colleges were constructed where the roads are convenient for transportation.

Regarding the availability of electric generator in case of power break, as shown in item 6 of Table 3.11, 21(100%) of teacher respondents from the government TVET colleges responded " very poor" to indicate the non- existence of electric generator in their respective colleges. Similarly, 57(76%) of teacher respondents from the private colleges responded " very poor".

It can be inferred from the analysis of the finding that availability of electric generators in both retypes of colleges were very poor. This may indicate that both types of colleges had almost no electric generators that provide them power for the non-stop function of the training in case of emergency situation or in case of power break.

Table 3.14 How many students share a computer between them selves during training?

No .	Responses	Government colleges								Private colleges							
		10+1		10+2		10+3		Total		10+1		10+2		10+3		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	During computer practices session how many students share a computer between themselves?																
	a) One computer for one student	-	-	-	-	19	37.26	19	17.92	-	-	7	9.46	39	41.05	46	18.40
	b) One computer for two students	4	11.76	13	61.90	32	62.74	49	46.22	27	33.33	48	64.85	56	58.95	131	52.40
	c) One computer for three students	30	88.24	8	38.10	-	-	38	35.85	47	58.03	10	13.51	-	-	57	22.80
	d) one computer for more than tree students	-	-	-	-	-	-	-	-	7	8.64	9	12.16	-	-	16	6.40
	Total	34	100	21	100	51	100	106	100	81	100	74	100	95	100	250	100

Students from the government and private TVET colleges were asked as to how many students share a computer between them selves during practical training session. As shown in Table 3.14, considerable number 49(46.22%) of respondents from the government colleges and majority 131(52.40%) of respondents from the private TVET colleges both responded that two students share one computer during the practical training-session.

However, when closely examined there was a significant difference among the responses of 10+1, 10+2 and 10+3 students in both types of colleges regarding the issue mentioned above.

As can be seen in Table 3.14, 13(61.90%) of 10+2 and 32(64.74%) of 10+3 student respondents from the government TVET colleges and 48(64.85%) of 10+2 and 56(58.95%) of 10+3 student respondents from the private TVET colleges responded that two students share one computer during the practical training session. On the other hand, a remarkable number 30(88.24%) of 10+1 student respondents from the government colleges and 47(58.03%) of 10+1 student respondents from the private TVET colleges testified that three students share one computer during the practical training session.

From the above it can be inferred that in both types of colleges there were shortage of computers as compared to the number of trainees enrolled. Thus, even if the trainees in both types of colleges suffer from shortage of computers, the problem seemed much worse for 10+1 students than 10+2 and 10+3 student.

Table 3.15 Responses of Teachers on Factors Affecting the Operation of the
Training Programs of the College

No	Responses	Government college		Private college	
		No.	%	No.	%
1	Limited capacity of accommodation of the existing class rooms computer laboratories etc in relation to the number of trainees.				
	a) Very high	4	19.05	-	-
	b) High	11	52.38	3	4.00
	c) Medium	5	23.81	7	9.33
	d) low	1	4.76	52	69.33
	e) Very low	-	-	13	17.33
Total		21	100	75	100
2	Inappropriateness of computers as well as equipments to the nature of courses and capacity of trainees.				
	a) Very high	-	-	-	-
	b) High	1	4.76	4	5.00
	c) Medium	3	14.29	13	17.33
	d) low	13	61.90	21	28.00
	e) Very low	4	19.05	37	49.33
Total		21	100	75	100
3	Shortage of training time.				
	a) Very high	-	-	-	-
	b) High	-	-	1	1.33
	c) Medium	3	14.29	10	13.33
	d) low	6	28.57	41	54.67
	e) Very low	12	57.14	23	30.67
Total		21	100	75	100
4	Inadequate number of trainees.				
	a) Very high	1	4.76	-	-
	b) High	3	14.29	47	62.67
	c) Medium	5	23.81	18	24.00
	d) low	12	57.14	9	12.00
	e) Very low	-	-	1	1.33
Total		21	100	75	100

No	Responses	Government colleges		Private colleges	
		No.	%	No.	%
5	Budget shortage.				
	a) Very high	3	14.29	-	-
	b) High	11	52.38	6	8.00
	c) Medium	4	19.05	12	16.00
	d) low	3	14.29	43	57.33
	e) Very low	-		14	18.67
Total		21	100	75	100
6	Inadequate number of qualified instructors				
	a) Very high	4	19.05		-
	b) High	11	52.38	2	2.67
	c) Medium	4	19.05	3	4.00
	d) low	2	9.52	16	21.33
	e) Very low	-	-	54	72.00
Total		21	100	75	100
7	The degree of improper utilization of existing training facilities				
	a) Very high	-	-	-	-
	b) High	2	9.52	3	4.00
	c) Medium	1	4.76	7	9.33
	d) low	14	66.67	11	14.67
	e) Very low	4	19.05	54	72.00
	Total	21	100	75	100
8	Outdated training facilities				
	a) Very high	5	23.81	-	-
	b) High	11	52.38	-	-
	c) Medium	4	19.05	18	24.00
	d) low	1	4.76	40	53.33
	e) Very low	-	-	17	22.67
Total		21	100	75	100

Table 3.16 Summary Table of One-way ANOVA On Factors Affecting the Operation of Training Programs.

No	Items	Respondents	No	Mean	S.d
1	Limited capacity of the existing classrooms, Computer laboratories etc.in relation to the number of trainees.	Teacher respondents			
		Government college	21	3.8571	0.79282
		Private college	75	2.0000	0.65760
		Total	96	2.4063	1.03189
2	Inappropriateness of computers as well as equipments to the nature of courses and capacity of trainees.	Teacher respondents			
		Government college	21	2.0476	0.74001
		Private college	75	1.7867	0.91966
		Total	96	1.8438	0.88648
3	Shortage of training time.	Teacher respondents			
		Government college	21	1.5714	0.74642
		Private college	75	1.8533	0.69152
		Total	96	1.7917	0.70958
4	Inadequate number of trainees.	Teacher respondents			
		Government college	21	2.6667	0.91287
		Private college	75	3.4800	0.75980
		Total	96	3.3021	0.85986
5	Budget shortage.	Teacher respondents			
		Government college	21	3.6667	0.91287
		Private college	75	2.1333	0.81096
		Total	96	2.4688	1.04583
6	Inadequate number of qualified instructors.	Teacher respondents			
		Government college	21	3.8095	0.87287
		Private college	75	1.3733	0.69308
		Total	96	1.9063	1.24882
7	The degree of improper utilization of existing training facilities.	Teacher respondents			
		Government college	21	2.0476	0.80475
		Private college	75	1.4933	0.87570
		Total	96	1.6146	0.88698
8	Outdated Training facilities.	Teacher respondents			
		Government college	21	3.9048	0.88909
		Private college	75	2.0133	0.68760
		Total	96	2.4271	1.07356

Concerning limited capacity of accommodation of the existing classrooms, computer laboratories, etc. in relation to the number of students, as shown in item 1 of Table 3.15, 11(52.38%) of teacher respondents from the government TVET colleges asserted that the problem of limited accommodation capacity of classrooms and computer laboratories in

connection to the number of students enrolled in their respective colleges was found "high". On the contrary, the majority 52(69.33%) of teacher respondents from private colleges replied low regarding the problem of limited accommodation capacity of existing classrooms and computer laboratories in connection to the number of students enrolled in their respective colleges.

From the finding obtained and from the result of one-way ANOVA obtained in Table 3.16 of item 1, it can be concluded that private TVET colleges had no a problem of accommodation capacity of classrooms and computer laboratories in relation to their students enrolled as compared to that of the government TVET colleges. (See also appendix 3)

Teacher respondents from both government and private TVET colleges were asked to rate as how computers and equipments were inappropriate to the nature of the courses and capacity of the trainees. Accordingly, as can be seen from item 2 of Table 3.15, 13(61.90%) and 37(49.33%) of teacher respondents from government and private TVET colleges endorsed that the problem regarding the issue was "low" and "very low" respectively.

Regarding the problem of shortage of the training time, as can be seen from item 3 of Table 3.15, the majority 12(57.14%) of teacher respondents from the government TVET colleges and 41(54.67%) of teacher respondents from private TVET colleges replied regarding the existence of the problem mentioned "very low" and "low" respectively.

As depicted in item 4 of the Table 3.15, the majority 12(57.14%) of teacher respondents from the government TVET colleges pointed out that the extent of inadequate number of trainees that enrolled in the colleges under the investigation to affect the operation of the training program was found to be "low". Conversely, remarkable number 47(62.67%) of teacher respondents from the private TVET colleges asserted that the inadequate number of the trainees to affect the operation of the training program was found "High".

From the responses given by IT teachers from both types of colleges, it is possible to realize that private TVET colleges had inadequate number of students as compared to that of government TVET colleges.

Regarding the problem of budget, as shown in item 5 of Table 3.15, 11(52.38%) of the teachers from the government TVET colleges confirmed that their colleges had faced a problem of budget to conduct the training program in their respective departments. On the contrary, majority of the teachers 43(57.33%) from private TVET colleges agreed that as such their colleges had no a shortage of budget.

Moreover, as can be observed from item 5 of Table 3.16, the One-way ANOVA result shows that private colleges were much better in terms of having adequate budget to undertake their training programs more likely in better quality than that of government TVET colleges.

Respondents from both types of colleges were requested to rate if their colleges had shortage of qualified teachers. In connection with this, as can be seen from item 6 of Table 3.15, majority 54(72%) of teachers from the private TVET colleges agreed that the above mentioned problem was found to be "low". In other words, private TVET colleges had adequate and qualified teachers at their disposal. Conversely, 11(52.38%) of teacher respondents from the government colleges confirmed that their colleges had faced a problem of shortage of teachers having the necessary skill and qualification. This shows that private colleges are much better in terms of having adequate number of teachers having minimum required standard than that of government colleges.

Regarding the degree of improper utilization of existing training facilities, as can be seen from item 7 of Table 3.15, majority 14(66.67%) of IT teachers from government colleges and 54(53.6%) of IT teachers from private TVET colleges agreed that the degree of improper utilization of existing training facilities in their colleges was "low" and "very low" respectively.

From the responses given by teacher respondents from both types of colleges, it is possible to realize that the existing training facilities in both types of colleges were, in relatively speaking, properly utilized for effective functioning of the training programs in the sample colleges that were under the study.

In the last item of Table 3.15, the teachers were asked to indicate the degree of the out-datedness of the training facilities of their colleges. To this effect, 40(53.33%) of IT teachers from private TVET colleges agreed that the problem of existing of out-datedness of the training facilities was found to be "low". On the contrary, 11(52.38%) of IT teachers from the government colleges asserted that the problem of existing of out-datedness of the training facilities was found "High".

From the responses given by the teachers and from the result of one-way ANOVA obtained in Table 3.16 of item 8, it is possible to realize that private colleges are relatively equipped with modern training facilities than government TVET colleges to conduct the training programs more efficiently and effectively in their colleges

Table 3.17 Responses of Teachers on Areas of Training Programs that need to be Improved

No	Area of Training	Government College		Private College	
		No.	%	No.	%
1	The curriculum (if it lacks relevance)				
	a) Agree	13	61.91	65	86.67
	b) Undecided	2	9.52	3	4
	c) Disagree	6	28.57	7	1.33
Total		21	100	75	100
2	Training facilities (computers, equipments, etc.)				
	a) Agree	19	90.48	48	64.00
	b) Undecided	-	-	6	8.00
	c) Disagree	2	9.52	21	28.00
Total		21	100	75	100
3	Practical aspects of the training (if it is more of theoretical)				
	a) Agree	18	85.71	43	57.33
	b) Undecided	1	4.76	3	4
	c) Disagree	2	9.53	29	38.67
Total		21	100	75	100
4	Teachers' qualification to meet the standard.				
	a) Agree	19	90.48	59	78.67
	b) Undecided	-	-	4	5.33
	c) Disagree	2	9.53	12	16
Total		21	100	75	100

Regarding parts of the training programs that need to be improved, as can be seen from item 1 of Table 3.16 13(61.91%) of IT teacher respondents from the government TVET colleges and 65(86.67%) of IT teacher respondents from the private TVET colleges agreed that the curriculum is one part of the training programs that needs to be improved. Both types of colleges claimed the need of changing the existing curriculum. However, in relatively speaking, teacher respondents from private colleges showed significantly

higher need for improving the existing curriculum. The most probable reason for the need of improving the curriculum might be it lacks relevance to the world of work.

With regard to training facilities such as computers, scanners, printers, etc. as can be seen from item 2 of Table 3.16, 19(90.48%) of teacher respondents from the government colleges and 48(64%) of the teacher respondents from private TVET colleges indicated that the training facilities of their respective colleges need to be improved for the proper functioning of the training program. Here, relatively a higher proportion of teachers from the government colleges stressed on the need of improving the training facilities of their respective colleges.

Thus government colleges relatively had higher need for expansion and improving on the training facilities. From the above it can be inferred that private colleges have better training facilities for the betterment of the training programs than that of government colleges at their disposal. Moreover, as was observed by the researcher, it was proved that the existing problems regarding the training facilities need to be improved mainly in those of government TVET colleges than private TVET colleges.

Concerning the practical aspect of the training, as shown in items 3 of Table 3.17 the majority of the respondents 18(85.71%) of the teacher from the government TVET colleges and 43(57.33%) of teacher respondents from private sample colleges respectively agreed that the practical aspect of the training needs to be improved for it is more of theoretical than it is practical. However, government colleges showed significantly higher need of improving the practical aspect of the training for it is more of theoretical aspect. From this, one can conclude that practical trainings are better provided in private TVET colleges than in government TVET colleges.

Regarding teachers' qualification, as can be seen from item 4 of Table 3.16, the majority of the respondents 18(90.48%) of the teachers from government colleges and 59(78.67%) of teacher respondents from private TVET colleges agreed that teachers' qualification need to meet the standard which stipulated in the Ethiopian TVET strategy. Thus, both

types of colleges stressed on the need of teachers' qualification to meet the required level of standard.

As whole, the above findings obtained from most of the items of Table 3.17 indicate that, most of the respondents from both types of colleges insist to pay attention for the need of improving the curriculum, training facilities, practical aspect of the training and teachers' qualification.

However, in relatively speaking, government colleges showed significantly higher need of improving training facilities, the practical aspect of the training and teachers qualification to meet the standard. On the other hand, private colleges showed significantly higher interest for the need of improving the existing curriculum.

To wind up, important responses were forwarded to the open-ended questions by both teacher and student respondents.

According to both teacher and student respondents from the government colleges, some of the major problems that impeded the delivery of effective IT training programs were:

- Lack of adequate training facilities (classrooms, computer laboratories, up-to-date computers, Internet services, etc.) which fail to go in line with the present increased enrollment of students in government TVET colleges.
- Admission of poor quality students
- Inadequate funding and delaying in reaching colleges timely.
- Lack of reference books and textbooks.
- Lack of efficient management.
- Weak attention given to practical training.
- Weak Internet connectivity.

On the other hand, both teacher and student respondents from private training colleges mentioned some major problems that hindered the delivery of effective IT training programs, these were:

- Weak attention given to provide teachers with refresher(in-service) programs that could help them to upgrade their professional skills.
- Less attention given to practical training.
- Admission of poor quality students.

Finalizing the task of presenting, interpreting and analyzing the data, the paper leads to the last chapter that refers to the summary, conclusions and recommendations.

CHAPTER 4

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The final chapter of the thesis deals with major findings of the study, conclusion drawn on the basis of findings and recommendations that are believed to suggest ways by which the quality of IT facilities can be raised in TVET colleges of Addis Ababa.

4.1 Summary

The major objective of this study was to discover the existing IT resources and facilities rendered to IT graduates in government and private TVET colleges in Addis Ababa, so that, they produce adequately trained and competent IT personnel that the labour market requires.

The basic questions were raised which enabled the researcher conduct proper investigations. These were, the extent of adequacy of training facilities and proper utilization of the existing ones in the colleges, whether teachers have the necessary qualification and competency, the similarity and differences between the government and private colleges and to suggest ways by which the quality of IT facilities can be raised in the colleges.

The research employed comparative study and it was conducted in five government TVET colleges and ten private colleges in Addis Ababa.

The subjects of the study were 96 teachers and 356 students. The teachers were selected through availability sampling based on willingness while students were selected using random sampling techniques.

Data was collected from these respondents through questionnaires and observation check lists. The data obtained were analyzed using statistical tools such as percentages and one-way ANOVA Tests.

Based on the results of the data analysis, the major findings of the study are the following:

- 4.1.1 From the finding it was observed that the participation of female teachers and students in both types of colleges was found to be low. This low females participation in both types of colleges, government as well as private TVET colleges, seems to emanate from the cultural male domination context which is common in developing countries of which Ethiopia is part and parcel.
- 4.1.2 Regarding service year and age aspect, most teachers in government TVET colleges are more aged and experienced than teachers in private colleges. Besides, the study revealed that student respondents from private TVET colleges were relatively older than student respondents from government colleges.
- 4.1.3 Regarding qualification of teachers, both types of colleges had considerable number of IT teachers with BA/BSc degree. However, private TVET colleges had a better number of IT teachers with MA/MSc and PhD degrees than government TVET colleges. Thus, private TVET colleges had better composition by qualification.

- 4.1.4 With regard to refresher courses, government colleges were better in providing in-service training for their respective teachers, than private TVET colleges.
- 4.1.5 Regarding students level of education prior to joining their colleges, all students from government colleges and majority of the students from private colleges were students who completed grade 10. Besides, considerable number of students in private colleges were who completed grade 12 prior to joining their colleges.
- 4.1.6 Based on the finding, most of the IT teachers from government colleges and few number of IT teachers from private TVET colleges were not specialized with areas related to Information Technology. In other words, these teachers were graduated in other disciplines other than Computer Science, Information Technology or Electrical Computer Engineering.
- 4.1.7 The study disclosed that, in both types of colleges government as well as private TVET colleges, there were courses found which were not properly delivered due to lack of skilled and qualified teachers IN government TVET colleges and due to time constraints in private colleges. However, the problem seemed much worse in government colleges than in private colleges.
- 4.1.8 The information obtained from the respondents indicates that private TVET colleges had a better number of instructors by staff composition of educational qualification and training facilities that go in line with the number of students enrolled. Moreover, private colleges were better than government TVET colleges in running their activities under qualified and adequate number of administrative staffs to support the training programs in their respective colleges.

- 4.1.9 Regarding classroom conditions, majority of respondents from both types of colleges asserted that the classroom conditions in their respective colleges were in a good position and adequate enough to accommodate the number of trainees enrolled in each year. Furthermore, the observation conducted in the actual setting of both types of colleges by the researcher also proved the above findings.
- 4.1.10 Based on the findings, the quality and quantity of computer laboratories found in private colleges were relatively better than laboratories found in government TVET colleges. Besides, the study disclosed that private TVET colleges were relatively better than government TVET colleges in having adequate and modern computers for the purpose of effective operation of the training program. Furthermore, the researcher also proved the above were true findings while he was conducting an observation in the actual setting of both types of colleges.
- 4.1.11 The information obtained from the respondents indicates that, the time allotted for practical aspects was not sufficient enough in both types of colleges. However, in relatively speaking the emphasis given to the practical aspect of the training was better in private colleges than in government colleges.
- 4.1.12 From the finding it was observed that private TVET colleges had no a problem of maintaining failed computers on time. However, as observed the actual settings of government TVET colleges, large number of failed computers were simply put aside in different shops. Some of these computers have been seriously damaged by rust that it looks impossible to make them functional by any kind of repair what so ever. The most probable reason for this serious problem might be the absence of appropriate technicians in the colleges to maintain and repair these computers and make them ready to be used in the training process on time.

- 4.1.13 With regard to computer networks, the majority of the respondents reported that private colleges had better number of computer laboratories whose computers are properly networked as compared to that of government colleges so that their students share ideas and learn from each other through the computer networks.
- 4.1.14 Based on the finding, government colleges seemed relatively unable to provide Internet services to students while private colleges were relatively fair in this regard. Here it may be a great surprise to see that Entoto TVET College is the only government college in Addis Ababa whose computers were networked and to some extent provide Internet services to students. However, respondents of both types of colleges claimed to have adequate Internet services at their disposal.
- 4.1.15 The information obtained from the respondents indicates that both types of colleges had a problem of supplies and stationeries for laboratory works, even if the problems seemed more severe in government TVET colleges than private TVET colleges.
- 4.1.16 From the finding it was observed that, the provision of health services to students were not as such satisfactory in both types of colleges, though private colleges were better in this regard.
- 4.1.17 Based on the finding in both types of colleges food services and cafeteria conditions was either inadequate or in available. However, in relatively speaking, the provision of food services and cafeteria conditions were better in private colleges than in government TVET colleges. In addition. The provision of dormitory services to students, almost all respondents from both government and private colleges confirmed that almost no dormitory services were provided in

their respective colleges.

4.1.18 From the finding it was observed that both the government and private TVET colleges did not give any guidance service that worth mentioning in well organized manner to their students. However, the problem for not providing proper guidance services were seemed sever in private TVET colleges than in government colleges.

4.1.19 Both the government and private TVET colleges had almost no stand by electric generators that could help them in case of emergency or in case of power break.

4.1.20 Regarding factors affecting the proper functioning of the training programs, based on the findings some of the major problems can be identified as follows:

- Limited capacity of existing classrooms, budget constraints, inadequate number of qualified instructors and outdated training facilities were factors affecting the proper functioning of the training programs in government TVET colleges.
- Inadequate number of trainees in relation to the number of instructors and training facilities was found to be "high" problem for private TVET colleges.

4.1.21 It was observed that teachers from both government and private colleges claimed some areas that need to be improved for further expansion of the training programs as follows:

- Teachers from the government TVET colleges showed higher need of improving training facilities, the practical aspect of the training and teachers qualification to meet the standard.
- A large proportion of teachers from the private TVET colleges claimed

that the existing curriculum has to be improved to some extent and the most probable reason might be it lacks relevance to the world of work in competitive labour market.

4.2 Conclusion

The new information technology has opened up a whole new potential in technology based learning. It should be possible to use and apply simple as well as modern technology and communication technology in the TVET teaching and learning process. However, effective IT training program requires training facilities which include computer-student ratio, up-to-datedness of computers networking facilities, Internet connectivity in training laboratories, etc.

In fact, in producing a required manpower with the necessary knowledge and skills, the availability and adequacy of training facilities along with conducive policy environment as well as other factors are equally important.

Based on the major findings of the study, the following conclusions are drawn.

- 4.2.1 As it is indicated in the literature the availability and utilization of modern training facilities with adequate financial resources in any training institution are the major important factors for providing quality training for students as well as for providing skilled-manpower the labour market requires currently. However, contrary to this, the final result of the study showed that, the availability and utilization of training facilities of the colleges under this study was insufficient. Mainly, the government TVET colleges were not relatively equipped with minimum requirements of computer laboratories, with adequate and modern computers, and with the necessary computer laboratory equipment as well.

- 4.2.2 According the technical and vocational training strategy of the ministry of education, an instructor in any field of training in technical and vocational training institute has to have a minimum of B.A or B.Sc in the area of training he gives. However, most of IT teachers from government colleges and some of IT teachers from private colleges were not specialized with areas related to Information Technology. Besides, the study revealed that there were some IT courses which were not properly treated mainly due to lack of skilled and qualified teachers in government TVET colleges. To mention, in private TVET colleges, weak attention was given to provide teachers with refresher courses that could help them to upgrade their professional skills.
- 4.2.3 As the study revealed, lack of textbooks and reference materials are some of the major problem that the colleges under the study faced. Moreover, insufficient provision of guidance services, shortage of health services and the likes were mainly characterized in the sample TVET colleges as major implementation problems of the training programs.
- 4.2.4 The time allotted for practical aspects of the training was not sufficient enough in both types of colleges. Mainly, according to the majority of respondents, the training given in government colleges were more of theoretical.
- 4.2.5 As the study revealed, large number of faulty machines like printers, photocopy machines, computers were simply put aside in the laboratories of some government TVET colleges. Most probably, these serious problems have come about as a result of the absence of appropriate technicians in the colleges to maintain and repair these equipments and make them ready to be used in the training process at the right time. However, in private TVET colleges, the problem of maintaining the training facilities and equipment was minimal.

4.2.6 Among the other functions, the aim of managements in TVET college is to coordinate educational facilities and vital educational resources and above all, the efforts of professionals so that they can collectively fulfill the prescribed objectives of the college and the national system of the education and training policy. "Executives are made not born" cooper (1980). In this regard, as the result of the study indicates, government TVET colleges had a shortage of administrative staff with required level of education. In some government colleges, there were idle computers and training equipments put aside due to minor repair problems. Moreover, the finding of the study disclosed that constraints of budget was one of the factors affecting the operation of the training programs in government colleges.

In general, all the above mentioned problems, perhaps resulted from poor management practices that observed in such colleges. However, private TVET colleges were better in this regard.

4.2.7 The use of the Internet in the TVET training system specially in IT training program is so vital. Internet enables students to extract resources, to read any book from any library in the world, to exchange innovations and training materials etc. In this regard, as the study revealed; the provision of Internet services to students, in both types of colleges under the study, was insufficient. Mainly, the provision of Internet services to students in government TVET colleges were almost non-existent. To our surprise, among the five government colleges Entoto TVET college is the only college which provides Internet services to students.

4.2.8 Computers need electric power to operate. If an electric power break is encountered in the middle of practical session of IT training, it stops the on going-training. However, both government and private TVET colleges had almost no stand by electric generators that could help them in case of power break.

In general, the availability and utilization of IT training facilities in private TVET colleges seemed better when compared to government colleges. However, as most

of government TVET colleges were newly opened and beginners, their endeavors and achievements can also be considered as the promising and encouraging ones.

4.3 Recommendations

On the basis of the conclusion drawn from the findings of the study, the following suggestions are forwarded that are believed to indicate ways by which the quality of IT training facilities in TVET colleges can be raised.

- 4.3.1 Insuring the availability of essential training facilities is a prerequisite for the quality improvement of IT training. Therefore, computer laboratories should be equipped with up-to-date computers, printers, scanners, seats, etc. that are able to accommodate enrolled students of the department. Mainly government colleges, before starting the training program, should assure the extent of its available resources and training facilities that go in line with the enrollment rates of their students. Besides, the issue of expansion of the training facilities that are being under taken in Entoto TVET college should be given equal emphasis to every government colleges of Addis Ababa.
- 4.3.2 The major areas of specialization of most IT teachers in government TVET colleges were not related to what they are teaching. On the other hand, private colleges were weak in providing their teachers with refresher programs. Therefore, emphasis should be given to develop systematic further education and training schemes to continuously upgrade the competencies of existing IT teachers in the TVET colleges. In other words, in-service trainings should be provided to IT teachers.
- 4.3.3 Sufficient budget should be allocated to government TVET colleges. So that, they could purchase the necessary training materials on time and make available to teachers and students to be used properly in the colleges in order to enhance the

effectiveness of the training programs.

- 4.3.4 There were computers and training equipments which were previously bought with high costs now found in some sample government TVET colleges put aside, perhaps, due to minor repair problems. At this time, they are surprisingly getting out of use and consequently they are found under worse conditions as observed in their actual settings. It is quite advisable to maintain and use them effectively for the training program of the colleges. Besides, these sample colleges should also be advised to use the existing budget and training facilities more efficiently.
- 4.3.5 As observed their actual settings, most of the colleges under the study had no computer maintenance workshops. Besides, most of the sample government TVET colleges should ensure to have at least one computer maintenance shop equipped with the necessary tools and instruments at each college. Mainly, the government TVET colleges should also be advised to assign appropriate and skilled technician in each workshop who could maintain and repair damaged computers and make them ready to be used in the training process at the right time.
- 4.3.6 Developing practical skills than theoretical knowledge enable trainees to be confident and productive citizens having readiness for either self or wage employment. However, as the study revealed, in the sample TVET colleges, emphasis was not given to practical aspects of the IT training. Mainly, in the government TVET colleges the trainings were more of theoretical.

The practical aspect of IT training should be emphasized.

If it is properly devised, it is possible to train IT student in TVET colleges how to assemble new computer by providing accessories bought from the open market available. Besides, these newly assembled computers could be sold to different schools or organizations with fair price. By doing so, it is possible for the colleges to generate their own income.

In general, IT students in TVET colleges should be taught practical skills that the labour market demands at current. For example,

- How to assemble new computers.
- How to troubleshoot and repair failed computers.
- How to install different soft wares into a computer, etc.

4.3.7 The curriculum designed by the Ministry of Education at central level limits the flexibility of the TVET colleges to adjust their training programs to the changing needs of the city. It seems advisable to split curriculum development activities into macro and micro levels. The macro level should limit it self to activities at a national level, while the micro level deal with activities at the institutional levels, with the intent to orient the training towards the demand of the local labour market.

4.3.8 Among the courses of IT training programs in TVET colleges, Internet is included. According to the curriculum of the TVET, the course "Internet" should also be provided to students practically. However, most of the colleges under the study had no Internet connectivity and students under these colleges were obliged to learn Internet only theoretically. Therefore, these colleges should be advised to allocate sufficient budget so that, they buy Internet line and enable their students browse an Internet practically.

4.3.9 Along with training facilities and qualified teachers, administrative staffs are required to support the academic activities of the training programs. Mainly, the principals or deans in TVET colleges have responsibilities that are very broad and of great depth in nature because professionals under their leadership are engaged in a noble and dedicated activities of shaping human mind which requires a very special care and handling. Therefore, care should be taken when ever assigning a

principal, only capable and competent principals must be identified and assigned who are possessing vocational and managerial skills.

4.3.10 It is wise to arrange conventional programs so as government and private TVET colleges share their experiences. There are a great deal of lessons which are of great value to be learned by government TVET colleges from private TVET colleges in turn private colleges can also learn some considerable experiences from government colleges.

To wind up, this study is a small endeavor to explore the extent of availability and utilization of IT training facilities in TVET colleges. It is not an end by it self. Therefore, the writer recommends a more detail investigation in the same area so as to further strengthen the findings of the study.

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APPENDICES

**Addis Ababa University
School of Graduate Studies
Department of Business Education**

Data Collection Form 1 : *Questionnaire to be filled out by Technical and Vocational Instructors*

Dear Respondent.

I am a Masters candidate at the School of Graduate Studies of Addis Ababa University. The purpose of this questionnaire is to gather data for my thesis towards completion of my Masters degree. The data to be gathered in this questionnaire is expected to help investigate as to how training facilities have effect/s/ on the delivery of effective training in both Government and Private Technical and vocational Training colleges in Addis Ababa.

It is my belief that the success of this study depends on your sincere and frank responses.

Thank you for responding to my questionnaire.

Ayele Tessema

***** Direction for filling out the questionnaires**

- a. *To respond to multiple choice questions, please 'Encircle' the letter identifying the answer most fits your choice.*
- b. *In parts where written responses are required, please provide your written responses briefly in the blank spaces provided.*
- c. *Where the question requires ranking please rank the choices by assigning number 1 to the most appropriate and the number 5 to the least appropriate.*
- d. *To help the researcher treat your response confidentially and objectively, please **do not** write your name on the questionnaire.*
- e. *You may please use the blank back page of this paper for more additional comments.*

Please Respond to the following questions as per the instructions provided above.

Part One : Data on respondent's personal profile

1. Name of the training college _____
2. Ownership of the training college. A. Government ☐ B. Private ☐
3. Sex A. Male ☐ B. Female ☐
4. Age Group A. 20-30 years ☐ C. 41-50 years ☐
B. 31-40 years ☐ D. above 50 ☐
5. Major Area of Your Specialization: _____
6. Your Qualification? A. Diploma, ☐ B. BA/BSc, ☐ C. MA/MSc. ☐ D. Ph.D ☐
E. If others specify _____
7. Years of service:
A. Below two years ☐ C. 6-10 years ☐
B. 2-5 years ☐ D. above ten years ☐
8. Have you recently attended any refresher/in-service training workshop/s/ or courses relating to the courses you are delivering?
A. Yes ☐ b. No. ☐
9. If so, what was the theme/topic of the in-service training/workshop you attended?

Part Two: Questions Relevant to the Study

10. Are there Information Technology (IT) courses which were not properly delivered?
A. Yes ☐ B. No ☐
11. If your answer to the above question is yes, specify the courses _____
12. If the answer to question #10 is yes, what do you think the reason for not properly delivered?
A. Lack of teachers having the necessary skills and qualifications. ☐
B. Shortage of training time. ☐
C. Shortage of computers ☐
D. Out dated computers ☐
E. If others, specify _____

Part Three: Opinion Survey

Given below are a number of points indicating adequacy and quality of human and material resources essential for delivering effective training, which include trainers, trainees, machines, workshops, classrooms, laboratories, libraries, teaching materials.

Please, rank these items in a 1-5 scale with the following scoring scale:

5= very good

4 = Good

3=Moderate

2= Poor

1= Very poor

[Please, indicate your choice by circling one of the following]

No.	Issue for ranking	5=Very good	4= Good	3=Moderate	2= Poor	1=Very poor
13	Adequacy of teachers, students and supportive					
13.1	Availability of teachers with necessary skills and educational qualification	5	4	3	2	1
13.2	Adequacy of supportive staff with the required level of education	5	4	3	2	1
13.3	The number of instructors as compared to the number of trainees and training facilities	5	4	3	2	1
14	Quality and Adequacy of Training Facilities					
14.1	Classroom condition	5	4	3	2	1
14.2	Quality of Computer laboratories	5	4	3	2	1
14.3	Up-to-date computers	5	4	3	2	1
14.4	Availability of Hardware Technicians in the college					
14.5	Maintenance of computers that need fixing	5	4	3	2	1
14.6	The extent to which the computers in the laboratories are networked.	5	4	3	2	1
14.7	Availability of Internet services to students	5	4	3	2	1
14.8	The extent of availability of relevant and up-to-date references and textbooks in the library(Hardcopy and Softcopy)	5	4	3	2	1
14.9	Supplies, stationeries, accessories for laboratory works	5	4	3	2	1
14.10	Time allotted for practical aspect of training	5	4	3	2	1
15	The extent of utilization and availability of general service					
15.1	Health service (clinic)	5	4	3	2	1
15.2	Food service (cafeteria)	5	4	3	2	1
15.3	Dormitory service (only if provided to students)	5	4	3	2	1
15.4	Guidance service	5	4	3	2	1
15.5	Road accessibility (convenient for transportation)	5	4	3	2	1
15.6	Availability of Electric generator.	5	4	3	2	1

16. To what extent do the following factors affect the operation of the training of your college?

No.	Factors	Rating				
		5=Very high	4= High	3=Medium	2= Low	1=Very Low
16.1	Limited capacity of accommodation of the existing classrooms, computer laboratories, etc in relation to the number of students	5	4	3	2	1
16.2	Inappropriateness of computers as well as equipments to the nature of courses and capacity of trainees	5	4	3	2	1
16.3	Shortage of training time	5	4	3	2	1
16.4	Inadequate number of trainees	5	4	3	2	1
16.5	Budget shortage	5	4	3	2	1
16.6	Inadequate number of qualified instructors	5	4	3	2	1
16.7	The degree of improper utilization of existing training facilities	5	4	3	2	1
16.8	Outdated training facilities	5	4	3	2	1
16.9	If others, please specify _____					

To respond to question 17, a choice of responses is provided in the table below. Put a check mark 'X' in the box of your choice.

17. In your opinion, if need arises to expand the training programs which area of training needs improvement most?

No	Area of training	Agree	Undecided	Disagree
	A. The curriculum (if it lacks relevance)	☐	☐	☐
	B. Training facilities (computers. equipment, etc)	☐	☐	☐
	C. Practical aspect of the training (if it is more of theoretical)	☐	☐	☐
	D. Teachers' qualification (to meet the standard)	☐	☐	☐
	E. If others please specify _____			

18. What are the major challenges that hinder your college from delivering effective IT training programs? _____

19. What are the major strategies so far utilized by your college to overcome training challenges? _____

20. What suggestions do you think would help improve technical and vocational training programs with respect to IT training? _____

_____ THE END _____

THANK YOU VERY MUCH FOR RESPONDING TO MY QUESTIONNAIRE!!

=====

አዲስ አበባ ዩኒቨርሲቲ በድንረ ምርቃ ት/ቤት የቢዝነስ ሥነ ትምህርት ዲፓርትመንት

መረጃ መሰብሰቢያ ቅጽ 3:- በቴክኒክና ሙያ ኮሌጆች ውስጥ በኢንፎርሜሽን ቴክኖሎጂ

ሠልጣኝ ተማሪዎች የሚሞላ መጠይቅ

እኔ በአዲስ አበባ ዩኒቨርሲቲ በድንረ ምርቃ ትምህርት ክፍል የሁለተኛ ዲግሪ /ማስትሬት ዲግሪ/ ዕጩ ተመራቂ ነኝ። የዚህ መጠይቅ ዋና ዓላማ ለሁለተኛ ዲግሪ መመረቂያ ማሟያ የጥናት ጽሑፍ ለማዘጋጀት የሚረዳ መረጃ ለመሰብሰብ ነው። በዚህ መጠይቅ የሚሰበሰበው መረጃ በመንግስትና መንግስታዊ ባለሆኑ /የግል/ ኮሌጆች ውስጥ የኢንፎርሜሽን ቴክኖሎጂ (IT) ሥልጠናን ለመተግበር፣ ለሥልጠና እገዛ የሚያደርጉ የማስልጠኛ ፋሲሊቲዎች (Training Facilities) ያሉበትን ተጨባጭ ሁኔታ ለማጥናት ታስቦ የተዘጋጀ ነው። እንደዚሁም በተገኘው ጥናት ላይ በመመርኮዝ ጠንካራ አሠራሮችን ለማድነቅና ለሚታዩት ደካማ ጎኖች ደግሞ የማሻሻያ የመፍትሔ ሃሳቦች ለመጠቀም ነው።

ይህ ጥናት ውጤታማ የሚሆነው በዕርስዎ በመጠየቅ መላሹ ግልጽና ትክክለኛ በሆነ ምላሽ ነው። ስለሆነም ትክክለኛ መልስ እንደሚሰጡኝ እምነቴ ነው።

መልስ በመስጠት ስለተባበሩኝ አመሰግናለሁ።

አየለ ተሰማ

መመሪያ :- መጠየቁን ለመሙላት የሚረዱ መመሪያዎች

ሀ. ለአማራጭ መልሶች ትክክለኛውን በመምረጥ በተሰጠው ሣጥን ውስጥ የ " X " ምልክት ያድርጉ፤

ለ. የጽሑፍ መልስ ለሚያስፈልጋቸው በተሰጡት ክፍት ቦታዎች ውስጥ መልስዎን በአጭሩ ያስቀምጡ፤

ሐ. ስም መፃፍ አያስፈልግም፤

መ. ለሚሰጡት ተጨማሪ መረጃ ቦታ ካልበቃዎት በየገጾቹ ጀርባ ያሉትን ባዶ ቦታዎች መጠቀም ይችላሉ።

የሚከተሉትን ጥያቄዎች ከላይ በተጠቀሰው መመሪያ መሠረት ይመልሱ።

ክፍል አንድ የመላሹ መረጃ:-

1. የሚማሩበት ኮሌጅ ስም _____

2. የኮሌጁ ባለበት _____ ሀ. የመንግስት ☐ ለ. የግል ☐

3. አሁን ያሉበት የክፍል ደረጃ _____

ሀ. 10+1 ☐

ለ. 10+2 ☐

ሐ. 10+3 ☐

4. ያታ _____

ሀ. ወንድ ☐

ለ. ሴት ☐

5. ዕድሜ :- ሀ. ከ14-18 ዓመት ☐ ሐ. ከ26-30 ዓመት ☐
 ለ. ከ19-25 ዓመት ☐ መ. ከ31-35 ዓመት ☐
 ሠ. ከ35 ዓመት በላይ ☐

6. ኮሌጅ ከመግባትዎ በፊት የነበርዎት የትምህርት ደረጃ

ሀ. 10ኛ ክፍል ☐ ለ. 12ኛ ክፍል ☐

ሐ. ከላይ ከተጠቀሱት ሌላ ካለ እባክዎ ይግለጹ _____

ክፍል ሁለት ከጥናቱ ጋር የተያያዙ ጥያቄዎች

በእርስዎ አመለካከት በማስልጠኛው ኮሌጅ ውስጥ ያለት ለሥልጠና የሚያገለግሉ ፋሲሊቲዎችና ሌሎችንም ተዛማጅ ጉዳዮች ምን ያህል በቂ እንደሆኑ በተሰጡት የማወዳደሪያ ነጥቦች አንዱን ብቻ በመምረጥ ያክብቡ::

የማወዳደሪያ ነጥቦች

5 = በጣም በቂ

2 = ከበቂ በታች

4 = በቂ

1 = በጣም ዝቅተኛ

3 = መጠካኛ

ተራ. ቁ.	መመዘኛዎች	5 = በጣም በቂ	4 = በቂ	3 = መጠካኛ	2 = ከበቂ በታች	1 = በጣም ዝቅተኛ
7	የመምህራን የተማሪዎች እንዲሁም የድጋፍ ሰጪ ሠራተኞች በበቂ ቁጥር መኖራቸው					
7.1	በኮሌጁ ያሉት መምህራን የትምህርት ደረጃና ብቃት ከኮሌጁ የትምህርት ስልጠና አንፃር ሲታይ	5	4	3	2	1
7.2	ብቃት ያላቸው ድጋፍ ሰጪ /የአስተዳደር/ ሠራተኞች በበቂ ቁጥር ስለመኖራቸው	5	4	3	2	1
7.3	የመምህራን ቁጥርና የግብዓት (facilities) መሟላት ከተማበው ቁጥር አንፃር ሲታይ	5	4	3	2	1
8	ለሥልጠናው የሚያስፈልጉ ግብዓቶች (facilities) ብዛትና ጥራት					
8.1	የመማሪያ ክፍሎች ሁኔታ ለሥልጠናው ሂደት አመቺ ስለመሆናቸው	5	4	3	2	1
8.2	የኮምፒውተር ክፍሎች (laboratories) ብዛትና ለሥልጠናው አመቺነት	5	4	3	2	1
8.3	የኮምፒውተሮች ብዛትና ዘመናዊነት ከተማሪው ቁጥር አንፃር ሲታይ	5	4	3	2	1
8.4	ለተግባር ትምህርት የተመደበው የጊዜ /የሰዓት/ መጠን በቂነት	5	4	3	2	1
8.5	የሚበላሽ ኮምፒውተሮች በወቅቱ ስለመጠገናቸው	5	4	3	2	1
8.6	ተማሪዎች የኢንተርኔት አገልግሎት ተጠቃሚ ስለመሆናቸው	5	4	3	2	1
8.7	በቤተ መጽሐፍት ውስጥ ያሉት መጽሐፍት ዘመናዊነትና	5	4	3	2	1

ተራ. ቁ	መመዘኛዎች	5 = በጣም በቂ	4 = በቂ	3 = መጠነኛ	2 = ከበቂ በታች	1 = በጣም ዝቅተኛ
	ለሥልጠናው አስፈላጊነት					
9	ስለ አጠቃላይ አገልግሎት ሁኔታ					
9.1	የህክምና አገልግሎት /ክሊኒክ/	5	4	3	2	1
9.2	የምግብ አገልግሎት /ካፍቴሪያ/	5	4	3	2	1
9.3	የመኝታ ቤት አገልግሎት /በኮሌጁ ውስጥ የመኝታ አገልግሎት ካለ/	5	4	3	2	1
9.4	የምክር /የጋይዳንስ/ አገልግሎት	5	4	3	2	1
9.5	ሌላ ካለ ይገለጽ					

10. በትክክል ወይም በበቂ ሁኔታ ያልተማራችሁት የትምህርት ዓይነቶች ካሉ፡

ሀ. አሉ ☐

ለ. የሉም ☐

11. ለ10ኛው ተራ ቁጥር ጥያቄ የመለሱት መልስ " አሉ " ከሆነ እባክዎ የትምህርቶቹን ዓይነት ይጥቀሱ _____

12. በተግባራዊ ስልጠና ወቅት ምን ያህል ተማሪዎች በአንድ ኮምፒውተር ይጠቀማሉ?

ሀ. አንድ ኮምፒውተር ለአንድ ተማሪ ☐

ለ. አንድ ኮምፒውተር ለሁለት ተማሪዎች ☐

ሐ. አንድ ኮምፒውተር ለሦስት ተማሪዎች ☐

መ. ከሦስት በላይ ተማሪዎች በአንድ ኮምፒውተር ይጠቀማሉ ☐

13. በኮሌጅዎ ውስጥ የኢንፎርሜሽን ቴክኖሎጂ (IT) ሥልጠና በአግባቡ እንዳይተገበር ችግሮች ናቸው ብለው የሚያስቡትን ቢጠቁሙን፤ _____

14. ከላይ የተጠቀሱትን ችግሮች በኮሌጅ ደረጃ ለመቅረፍና ብሎም ለማስወገድ የተወሰዱ ስትራቴጂያዊ እርምጃዎች ካሉ ቢገልጹልን _____

15. በኮሌጅዎ ውስጥ የኢንፎርሜሽን ቴክኖሎጂን (IT) ሥልጠና ይበልጥ ለማጠናከርና ብሎም ለማሻሻል ይበጃሉ የሚለትን የመፍትሔ ሐሳቦች ቢጠቁሙን _____

አመሰግናለሁ

Addis Ababa University
School of Graduate Studies
Department of Business Education

Data Collection Form 4. Observation Check-list.

The purpose of *Data Collection Form 3. Observation Check-list* is to record relevant data from observation pertaining to the condition of training facilities of Government and Private colleges in Addis Ababa.

1. Name of the College _____
2. Ownership A. Government ☐ B. Private ☐
3. Establishment Year as TVET college _____
4. Number of computer laboratories _____
5. Total number of computers in each laboratory _____
6. From the total computers in each laboratory:-
 - A. Number of computers working _____
 - B. Number of computers failed/damaged _____
7. Total number of computers in the stock (if any) _____

		5=Very good	4= Good	3=Moderate	2= Poor	1=Very poor
8	General condition of training facilities					
8.1	Classrooms condition(Neatness,attractiveness,etc)	5	4	3	2	1
8.2	Classroom size	5	4	3	2	1
8.3	Upto-dateness of computers	5	4	3	2	1
8.4	Availability of computer maintenance services	5	4	3	2	1
8.5	Network facilities	5	4	3	2	1
8.6	Availability of internet services to students	5	4	3	2	1
8.7	Availability of relevance books in the libraries(Hard and Softcopies)	5	4	3	2	1
8.8	Availability of electric generator	5	4	3	2	1
8.9	Whiteboards	5	4	3	2	1
8.10	Desks/seats	5	4	3	2	1
9	General Service					
9.1	Attractiveness of the college as training institution (trees, flowers, sport field, farm land, fence...)	5	4	3	2	1
9.2	Cleanness of the compound and availability of the toilet	5	4	3	2	1
9.3	Provision for future expansion	5	4	3	2	1

Addis Ababa University
School of Graduate Studies
Department of Business Education

Data Collection Form 2: *Questionnaire to be filled out by the management (including principals/Deans of colleges or Department heads of IT)*

Dear Respondent.

I am a Masters candidate at the School of Graduate Studies of Addis Ababa University. The purpose of this questionnaire is to gather data for my thesis towards completion of my Masters degree. The data to be gathered in this questionnaire is expected to help investigate as to how training facilities have effect/s/ on the delivery of effective training in both Government and Private Technical and vocational Training colleges in Addis Ababa.

It is my belief that the success of this study depends on your sincere and frank responses.

Thank you for responding to my questionnaire.

Ayele Tessema

***** Direction for filling out the questionnaires**

- a. *To respond to multiple choice questions, please ‘Encircle’ the letter identifying the answer most fits your choice.*
- b. *In parts where written responses are required, please **provide your written responses briefly** in the blank spaces provided.*
- c. *Where the question requires ranking please rank the choices by assigning number 1 to the most appropriate and the number 5 to the least appropriate.*
- d. *To help the researcher treat your response confidentially and objectively, please **do not write your name on the questionnaire.***
- e. *You may please use the blank back page of this paper for more additional comments.*

Please Respond to the following questions as per the instructions provided above.

Part One : - Data on respondent's personal profile

1. Sex : A. ☐ Male B. ☐ Female
2. Age Group A. 20-30 years ☐ C. 41-50 years ☐
 B. 31-40 years ☐ D. above 50 ☐
3. Academic qualification _____
4. Field of specialization _____
5. Your current position _____
6. Year of Service: _____

Part 2: Questions Relevant to the Study

1. Name of the training college _____
2. Ownership of the training college. A Government ☐ B. private ☐
3. Year of college establishment as TVET college _____
4. Number Computer laboratories _____
5. Number of IT teachers of the college :

Diploma (12+2)	M _____	F _____	Total _____
Degree	M _____	F _____	Total _____
MA/M-Sc	M _____	F _____	Total _____
Ph.D	M _____	F _____	Total _____
Others	_____		
6. Do you provide/arrange refresher trainings to your IT teachers ?
 A. Yes ☐ B. No ☐
7. If your answer to the above question is yes, how frequently?
 A. Every Six months ☐ B Every year ☐ C. If different from A or B how often?
 Please specify _____
8. What are the entrance criterion for prospective students be admitted to your college?

9. Trainees enrolled during the Academic year 2006/07. (You may want to refer to your records to answer this question.)

Grade level	Number of trainees			Remark
	Male	Female	Total	
10+1				
10+2				
10+3				
Grand Total				

10. What are the major challenges that your college faces to carryout effective delivery of IT training programs? _____

11. What are the major strategies so far utilized by your college to overcome training challenges?_

12 What do you think would help improve the delivery of effective IT training in your college?_____

____ THE END _____

THANK YOU VERY MUCH FOR RESPONDING TO MY QUESTIONNAIRE!!

Appendix 4: Sample of Summary of One-Way ANOVA

T.Qual

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.5238	1.20909	.26385	1.9734	3.0742	1.00	5.00
Private	75	3.6933	1.15048	.13285	3.4286	3.9580	1.00	5.00
Total	96	3.4375	1.25499	.12809	3.1832	3.6918	1.00	5.00

ANOVA

T.Qual

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22.440	1	22.440	16.585	.000
Within Groups	127.185	94	1.353		
Total	149.625	95			

Descriptives

supstaf

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.3810	1.07127	.23377	1.8933	2.8686	1.00	5.00
Private	75	3.3867	.97111	.11213	3.1632	3.6101	1.00	5.00
Total	96	3.1667	1.07279	.10949	2.9493	3.3840	1.00	5.00

ANOVA

supstaf

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.594	1	16.594	16.820	.000
Within Groups	92.739	94	.987		
Total	109.333	95			

Descriptives

NOInst

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.4762	.92839	.20259	2.0536	2.8988	1.00	4.00
Private	75	3.9467	.88369	.10204	3.7433	4.1500	2.00	5.00
Total	96	3.6250	1.07850	.11007	3.4065	3.8435	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA

NOInst

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	35.475	1	35.475	44.448	.000
Within Groups	75.025	94	.798		
Total	110.500	95			

Descriptives

Adequacy

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	2.9717	1.10804	.10762	2.7583	3.1851	1.00	5.00
private	250	3.6760	.94158	.05955	3.5587	3.7933	1.00	5.00
Total	356	3.4663	1.04355	.05531	3.3575	3.5751	1.00	5.00

ANOVA

Adequacy

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.924	1	36.924	37.382	.000
Within Groups	349.671	354	.988		
Total	386.596	355			

Descriptives

SuppStaff

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	2.8019	1.10772	.10759	2.5886	3.0152	1.00	5.00
private	250	3.5200	1.09471	.06924	3.3836	3.6564	1.00	5.00
Total	356	3.3062	1.14526	.06070	3.1868	3.4256	1.00	5.00

ANOVA

SuppStaff

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.387	1	38.387	31.806	.000
Within Groups	427.240	354	1.207		
Total	465.626	355			

Descriptives

NOInst

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	2.5283	1.22052	.11855	2.2932	2.7634	1.00	5.00
private	250	3.8160	.96012	.06072	3.6964	3.9356	1.00	5.00
Total	356	3.4326	1.19786	.06349	3.3077	3.5574	1.00	5.00

ANOVA

NOInst

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	123.431	1	123.431	113.213	.000
Within Groups	385.951	354	1.090		
Total	509.382	355			

Descriptives

ClassCondition

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	4.0000	.89443	.19518	3.5929	4.4071	2.00	5.00
Private	75	3.9600	.79594	.09191	3.7769	4.1431	2.00	5.00
Total	96	3.9688	.81374	.08305	3.8039	4.1336	2.00	5.00

ANOVA

ClassCondition

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.026	1	.026	.039	.843
Within Groups	62.880	94	.669		
Total	62.906	95			

Descriptives

Laboratory

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.6667	1.23828	.27021	2.1030	3.2303	1.00	5.00
Private	75	4.1333	.72286	.08347	3.9670	4.2996	2.00	5.00
Total	96	3.8125	1.04944	.10711	3.5999	4.0251	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA

Laboratory

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	35.292	1	35.292	47.847	.000
Within Groups	69.333	94	.738		
Total	104.625	95			

Descriptives

UpToDateness

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.8095	1.03049	.22487	2.3405	3.2786	2.00	5.00
Private	75	3.8667	.99095	.11443	3.6387	4.0947	1.00	5.00
Total	96	3.6354	1.08695	.11094	3.4152	3.8557	1.00	5.00

ANOVA

UpToDateness

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.335	1	18.335	18.353	.000
Within Groups	93.905	94	.999		
Total	112.240	95			

Descriptives

Fixing

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.9048	1.44585	.31551	2.2466	3.5629	1.00	5.00
Private	75	4.0133	.83007	.09585	3.8224	4.2043	2.00	5.00
Total	96	3.7708	1.09043	.11129	3.5499	3.9918	1.00	5.00

ANOVA

Fixing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20.162	1	20.162	20.424	.000
Within Groups	92.796	94	.987		
Total	112.958	95			

Descriptives

Internet

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	3.0000	1.44914	.31623	2.3404	3.6596	2.00	5.00
Private	75	3.7467	1.00126	.11562	3.5163	3.9770	1.00	5.00
Total	96	3.5833	1.14861	.11723	3.3506	3.8161	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA

Internet

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.147	1	9.147	7.400	.008
Within Groups	116.187	94	1.236		
Total	125.333	95			

Descriptives

Books

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.2381	.94365	.20592	1.8086	2.6676	1.00	4.00
Private	75	2.3867	1.02527	.11839	2.1508	2.6226	1.00	5.00
Total	96	2.3542	1.00503	.10258	2.1505	2.5578	1.00	5.00

ANOVA

Books

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.362	1	.362	.356	.552
Within Groups	95.596	94	1.017		
Total	95.958	95			

Descriptives

Practical

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.1429	1.01419	.22131	1.6812	2.6045	1.00	4.00
Private	75	2.5733	1.19880	.13843	2.2975	2.8492	1.00	5.00
Total	96	2.4792	1.16961	.11937	2.2422	2.7162	1.00	5.00

ANOVA

Practical

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.040	1	3.040	2.252	.137
Within Groups	126.918	94	1.350		
Total	129.958	95			

Descriptives

ClassRoom

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	3.7830	.91552	.08892	3.6067	3.9593	2.00	5.00
Private	250	3.9040	.83039	.05252	3.8006	4.0074	2.00	5.00
Total	356	3.8680	.85711	.04543	3.7786	3.9573	2.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA
ClassRoom

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.090	1	1.090	1.485	.224
Within Groups	259.705	354	.734		
Total	260.795	355			

Descriptives

Laboratories

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	3.3585	1.50040	.14573	3.0695	3.6475	1.00	5.00
Private	250	3.2960	1.08679	.06873	3.1606	3.4314	1.00	5.00
Total	356	3.3146	1.22275	.06481	3.1872	3.4421	1.00	5.00

ANOVA

Laboratories

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.291	1	.291	.194	.660
Within Groups	530.473	354	1.499		
Total	530.764	355			

Descriptives

UpToDateness

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.8868	.78462	.07621	1.7357	2.0379	1.00	4.00
Private	250	2.5200	1.22294	.07735	2.3677	2.6723	1.00	5.00
Total	356	2.3315	1.14681	.06078	2.2119	2.4510	1.00	5.00

ANOVA

UpToDateness

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29.846	1	29.846	24.175	.000
Within Groups	437.042	354	1.235		
Total	466.888	355			

Descriptives

Practical

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.5000	.80770	.07845	1.3444	1.6556	1.00	4.00
Private	250	2.0680	.94390	.05970	1.9504	2.1856	1.00	5.00
Total	356	1.8989	.94102	.04987	1.8008	1.9970	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA

Practical

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24.016	1	24.016	29.281	.000
Within Groups	290.344	354	.820		
Total	314.360	355			

Descriptives

Fixed

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.4623	.60434	.05870	1.3459	1.5787	1.00	4.00
Private	250	3.2120	1.23497	.07811	3.0582	3.3658	1.00	5.00
Total	356	2.6910	1.34898	.07150	2.5504	2.8316	1.00	5.00

ANOVA

Fixed

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	227.898	1	227.898	192.952	.000
Within Groups	418.113	354	1.181		
Total	646.011	355			

Descriptives

Internet

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	3.0094	1.94444	.18886	2.6350	3.3839	1.00	5.00
Private	250	3.2560	1.23798	.07830	3.1018	3.4102	1.00	5.00
Total	356	3.1826	1.48526	.07872	3.0278	3.3374	1.00	5.00

ANOVA

Internet

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.525	1	4.525	2.058	.152
Within Groups	778.607	354	2.199		
Total	783.132	355			

Descriptives

Books

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	2.0472	.74810	.07266	1.9031	2.1912	1.00	4.00
Private	250	2.9400	1.19588	.07563	2.7910	3.0890	1.00	5.00
Total	356	2.6742	1.15576	.06126	2.5537	2.7946	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA

Books

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	59.338	1	59.338	50.633	.000
Within Groups	414.864	354	1.172		
Total	474.202	355			

Descriptive

Class Condition

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	4.0000	.89443	.19518	3.5929	4.4071	2.00	5.00
Private	75	3.9600	.79594	.09191	3.7769	4.1431	2.00	5.00
Total	96	3.9688	.81374	.08305	3.8039	4.1336	2.00	5.00

ANOVA

ClassCondition

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.026	1	.026	.039	.843
Within Groups	62.880	94	.669		
Total	62.906	95			

Descriptives

Laborator

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Gov	21	2.6667	1.23828	.27021	2.1030	3.2303	1.00	5.00
Private	75	4.1333	.72286	.08347	3.9670	4.2996	2.00	5.00
Total	96	3.8125	1.04944	.10711	3.5999	4.0251	1.00	5.00

ANOVA

Laboratory

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	35.292	1	35.292	47.847	.000
Within Groups	69.333	94	.738		
Total	104.625	95			

Appendix 4: Sample of Summary of One-Way ANOVA

Descriptives
UpToDateness

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.8095	1.03049	.22487	2.3405	3.2786	2.00	5.00
Private	75	3.8667	.99095	.11443	3.6387	4.0947	1.00	5.00
Total	96	3.6354	1.08695	.11094	3.4152	3.8557	1.00	5.00

ANOVA

UpToDateness

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.335	1	18.335	18.353	.000
Within Groups	93.905	94	.999		
Total	112.240	95			

Descriptives

Fixing

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.9048	1.44585	.31551	2.2466	3.5629	1.00	5.00
Private	75	4.0133	.83007	.09585	3.8224	4.2043	2.00	5.00
Total	96	3.7708	1.09043	.11129	3.5499	3.9918	1.00	5.00

ANOVA

Fixing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20.162	1	20.162	20.424	.000
Within Groups	92.796	94	.987		
Total	112.958	95			

Descriptives

Internet

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	3.0000	1.44914	.31623	2.3404	3.6596	2.00	5.00
Private	75	3.7467	1.00126	.11562	3.5163	3.9770	1.00	5.00
Total	96	3.5833	1.14861	.11723	3.3506	3.8161	1.00	5.00

ANOVA

Internet

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.147	1	9.147	7.400	.008
Within Groups	116.187	94	1.236		
Total	125.333	95			

Appendix 4: Sample of Summary of One-Way ANOVA

Descriptives

Books

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.2381	.94365	.20592	1.8086	2.6676	1.00	4.00
Private	75	2.3867	1.02527	.11839	2.1508	2.6226	1.00	5.00
Total	96	2.3542	1.00503	.10258	2.1505	2.5578	1.00	5.00

ANOVA

Books

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.362	1	.362	.356	.552
Within Groups	95.596	94	1.017		
Total	95.958	95			

Descriptives

Practical

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.1429	1.01419	.22131	1.6812	2.6045	1.00	4.00
Private	75	2.5733	1.19880	.13843	2.2975	2.8492	1.00	5.00
Total	96	2.4792	1.16961	.11937	2.2422	2.7162	1.00	5.00

ANOVA

Practical

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.040	1	3.040	2.252	.137
Within Groups	126.918	94	1.350		
Total	129.958	95			

Descriptives

ClassRoom

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	3.7830	.91552	.08892	3.6067	3.9593	2.00	5.00
Private	250	3.9040	.83039	.05252	3.8006	4.0074	2.00	5.00
Total	356	3.8680	.85711	.04543	3.7786	3.9573	2.00	5.00

ANOVA

ClassRoom

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.090	1	1.090	1.485	.224
Within Groups	259.705	354	.734		
Total	260.795	355			

Appendix 4: Sample of Summary of One-Way ANOVA

Descriptives

Laboratories

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	3.3585	1.50040	.14573	3.0695	3.6475	1.00	5.00
Private	250	3.2960	1.08679	.06873	3.1606	3.4314	1.00	5.00
Total	356	3.3146	1.22275	.06481	3.1872	3.4421	1.00	5.00

ANOVA

Laboratories

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.291	1	.291	.194	.660
Within Groups	530.473	354	1.499		
Total	530.764	355			

Descriptives

UpToDateness

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.8868	.78462	.07621	1.7357	2.0379	1.00	4.00
Private	250	2.5200	1.22294	.07735	2.3677	2.6723	1.00	5.00
Total	356	2.3315	1.14681	.06078	2.2119	2.4510	1.00	5.00

ANOVA

UpToDateness

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29.846	1	29.846	24.175	.000
Within Groups	437.042	354	1.235		
Total	466.888	355			

Descriptives

Pracical

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.5000	.80770	.07845	1.3444	1.6556	1.00	4.00
Private	250	2.0680	.94390	.05970	1.9504	2.1856	1.00	5.00
Total	356	1.8989	.94102	.04987	1.8008	1.9970	1.00	5.00

ANOVA

Practical

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24.016	1	24.016	29.281	.000
Within Groups	290.344	354	.820		
Total	314.360	355			

Descriptives

Fixed

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.4623	.60434	.05870	1.3459	1.5787	1.00	4.00
Private	250	3.2120	1.23497	.07811	3.0582	3.3658	1.00	5.00
Total	356	2.6910	1.34898	.07150	2.5504	2.8316	1.00	5.00

ANOVA

Fixed

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	227.898	1	227.898	192.952	.000
Within Groups	418.113	354	1.181		
Total	646.011	355			

Descriptives

Internet

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	3.0094	1.94444	.18886	2.6350	3.3839	1.00	5.00
Private	250	3.2560	1.23798	.07830	3.1018	3.4102	1.00	5.00
Total	356	3.1826	1.48526	.07872	3.0278	3.3374	1.00	5.00

Descriptives

Internet

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	3.0094	1.94444	.18886	2.6350	3.3839	1.00	5.00
Private	250	3.2560	1.23798	.07830	3.1018	3.4102	1.00	5.00
Total	356	3.1826	1.48526	.07872	3.0278	3.3374	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

Descriptives

Books

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	2.0472	.74810	.07266	1.9031	2.1912	1.00	4.00
Private	250	2.9400	1.19588	.07563	2.7910	3.0890	1.00	5.00
Total	356	2.6742	1.15576	.06126	2.5537	2.7946	1.00	5.00

ANOVA

Books

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	59.338	1	59.338	50.633	.000
Within Groups	414.864	354	1.172		
Total	474.202	355			

Descriptives

Health

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.0952	.70034	.15283	1.7764	2.4140	1.00	4.00
Private	75	2.2400	.92765	.10712	2.0266	2.4534	1.00	4.00
Total	96	2.2083	.88159	.08998	2.0297	2.3870	1.00	4.00

ANOVA

Health

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.344	1	.344	.440	.509
Within Groups	73.490	94	.782		
Total	73.833	95			

Descriptives

Food

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.1905	.81358	.17754	1.8201	2.5608	1.00	4.00
Private	75	2.1467	.67169	.07756	1.9921	2.3012	1.00	4.00
Total	96	2.1563	.70080	.07152	2.0143	2.2982	1.00	4.00

ANOVA

Food

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.031	1	.031	.063	.802
Within Groups	46.625	94	.496		
Total	46.656	95			

Appendix 4: Sample of Summary of One-Way ANOVA

Descriptives

Dormitory

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.8095	1.03049	.22487	2.3405	3.2786	2.00	5.00
Private	75	3.9467	1.03836	.11990	3.7078	4.1856	1.00	5.00
Total	96	3.6979	1.13434	.11577	3.4681	3.9278	1.00	5.00

ANOVA

Dormitory

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.215	1	21.215	19.740	.000
Within Groups	101.025	94	1.075		
Total	122.240	95			

Descriptives

Guidance

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.4762	.98077	.21402	2.0298	2.9226	1.00	4.00
Private	75	2.1733	1.07015	.12357	1.9271	2.4196	1.00	5.00
Total	96	2.2396	1.05376	.10755	2.0261	2.4531	1.00	5.00

ANOVA

Guidance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.505	1	1.505	1.360	.246
Within Groups	103.985	94	1.106		
Total	105.490	95			

Descriptives

Health

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	2.0943	.81098	.07877	1.9382	2.2505	1.00	4.00
Private	250	2.5280	1.12351	.07106	2.3881	2.6679	1.00	5.00
Total	356	2.3989	1.05798	.05607	2.2886	2.5092	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA

Health

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.999	1	13.999	12.927	.000
Within Groups	383.361	354	1.083		
Total	397.360	355			

Descriptives

Food

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.7830	.53461	.05193	1.6801	1.8860	1.00	3.00
Private	250	2.1320	1.19679	.07569	1.9829	2.2811	1.00	5.00
Total	356	2.0281	1.05579	.05596	1.9180	2.1381	1.00	5.00

ANOVA

Food

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.066	1	9.066	8.300	.004
Within Groups	386.653	354	1.092		
Total	395.719	355			

Descriptives

Dormitory

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	1.0283	.16662	.01618	.9962	1.0604	1.00	2.00
Private	250	1.0440	.25754	.01629	1.0119	1.0761	1.00	3.00
Total	356	1.0393	.23407	.01241	1.0149	1.0637	1.00	3.00

ANOVA

Dormitory

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.018	1	.018	.334	.564
Within Groups	19.431	354	.055		
Total	19.449	355			

Descriptives

Guidance

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	106	2.2830	.96367	.09360	2.0974	2.4686	1.00	4.00
Private	250	2.0240	.62045	.03924	1.9467	2.1013	1.00	4.00
Total	356	2.1011	.74750	.03962	2.0232	2.1790	1.00	4.00

ANOVA

Guidance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.994	1	4.994	9.143	.003
Within Groups	193.365	354	.546		
Total	198.360	355			

Descriptives

LimitedCapacityOf

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	3.8571	.79282	.17301	3.4963	4.2180	2.00	5.00
Private	75	2.0000	.65760	.07593	1.8487	2.1513	1.00	4.00
Total	96	2.4063	1.03189	.10532	2.1972	2.6153	1.00	5.00

ANOVA

LimitedCapacityOf

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	56.585	1	56.585	119.336	.000
Within Groups	44.571	94	.474		
Total	101.156	95			

Descriptives

Inappropriateness

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.0476	.74001	.16148	1.7108	2.3845	1.00	4.00
Private	75	1.7867	.91966	.10619	1.5751	1.9983	1.00	4.00
Total	96	1.8438	.88648	.09048	1.6641	2.0234	1.00	4.00

ANOVA

Inappropriateness

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.117	1	1.117	1.428	.235
Within Groups	73.539	94	.782		
Total	74.656	95			

Descriptives

TimeShortage								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	1.5714	.74642	.16288	1.2317	1.9112	1.00	3.00
Private	75	1.8533	.69152	.07985	1.6942	2.0124	-1.00	4.00
Total	96	1.7917	.70958	.07242	1.6479	1.9354	1.00	4.00

ANOVA

TimeShortage					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.304	1	1.304	2.634	.108
Within Groups	46.530	94	.495		
Total	47.833	95			

Descriptives

LessTrainees								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.6667	.91287	.19920	2.2511	3.0822	2.00	5.00
Private	75	3.4800	.75980	.08773	3.3052	3.6548	1.00	4.00
Total	96	3.3021	.85986	.08776	3.1279	3.4763	1.00	5.00

ANOVA

LessTrainees					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.853	1	10.853	17.179	.000
Within Groups	59.387	94	.632		
Total	70.240	95			

Descriptives

Budget								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	3.6667	.91287	.19920	3.2511	4.0822	2.00	5.00
Private	75	2.1333	.81096	.09364	1.9467	2.3199	1.00	4.00
Total	96	2.4688	1.04583	.10674	2.2568	2.6807	1.00	5.00

Appendix 4: Sample of Summary of One-Way ANOVA

ANOVA

Budget

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.573	1	38.573	55.498	.000
Within Groups	65.333	94	.695		
Total	103.906	95			

Descriptives

Instructors

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	3.8095	.87287	.19048	3.4122	4.2069	2.00	5.00
Private	75	1.3733	.69308	.08003	1.2139	1.5328	1.00	4.00
Total	96	1.9063	1.24882	.12746	1.6532	2.1593	1.00	5.00

ANOVA

Instructors

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	97.371	1	97.371	180.230	.000
Within Groups	50.785	94	.540		
Total	148.156	95			

Descriptives

Utilization

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gov	21	2.0476	.80475	.17561	1.6813	2.4139	1.00	4.00
Private	75	1.4933	.87570	.10112	1.2919	1.6948	1.00	4.00
Total	96	1.6146	.88698	.09053	1.4349	1.7943	1.00	4.00

ANOVA

Utilization

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.041	1	5.041	6.798	.011
Within Groups	69.699	94	.741		
Total	74.740	95			