INSTITUTE OF SOCIAL MINISTRY

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TECHNICAL EDUCATION AND DEVELOPMENT IN JUNIOR TECHNICAL SCHOOLS: A CASE STUDY OF ST. JOHN BOSCO TECHNICAL SCHOOL IN LIRA-UGANDA

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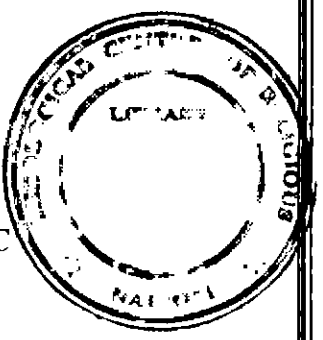

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DECLARATION

I, the undersigned declare that this full-scale project is a fruit of my personal effort through research and critical reflections. it entirely original and has never been submitted to any other college or university for academic credit.
All sources/information obtained from either written or oral have been cited in full or duly acknowledged.

Signed: _____
CHARLES JOSEPH TIKHIWA

Date: 30 - 03 - 2001

This project has been submitted for examination with my approval as a College Supervisor.

Signed: Tom Kearney
Bro. Tom Kearney, CFC

Date: 30 - 03 - 2001

DEDICATION

TO

"My brothers" **The Comboni Missionaries of the Heart of Jesus**, who are in a continual search for better ways to serve the poor and most abandoned. May God give us all inner strength and courage.

ACKNOWLEDGMENT

Several people have helped at different stages of this work. I am aware, first for practical reasons it would be impossible to thank everyone individually who generously contributed to the success of this Long Essay through their help, advice, encouragement and supportive prayers. Secondly, they know that I cannot adequately thank them. I wish therefore to mention only a few.

First, my heartfelt thanks go to Bro. Tom Kearney; the Dean of Studies Tangaza College, for his availability and prudent direction of this work and for his personal support and encouragement, which I felt very much while I worked under his guidance.

Special thanks to my superiors and brothers in my community of the "Comboni Brothers' Centre-Nairobi" for their supportive love and encouragement in my studies.

Finally, my heartfelt gratitude is due to my parents, whose profound faith and love have been the source of inspiration throughout my life and who from my childhood have always supported me and prided in my achievements.

LIST OF ACRONYMS

GNP:	Gross National Production
UNESCO:	United Nations Education, Scientific and Cultural Organisation
NRM/A:	National Resistance Movement/Army
RC:	Resistance Council
LC:	Local Council
UTC:	Uganda Technical College
UCC:	Uganda Commercial College
CRE:	Christian Religious Education
RDC:	Resident District Commissioner

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CHAPTER I:
GENERAL BACKGROUND TO THE STUDY

1.1 Problem of the Study

Many people are viewing with alarm the crisis of Technical education and the education systems in Uganda and all over Africa. As a result many questions or issues are being raised because education does not meet the people's expectations/needs. One of the questions being asked is, the education's contribution to human development as a person. Seemingly, all over Africa, technical education programmes are formulated with employment aspect in mind only, ignoring the development of the person as a whole. Students complete their education without skills on how to make life on their own.

This study is carried out to investigate Uganda's Junior Technical Education and its contribution to human development. Before further discussion some key concepts used in the study are briefly clarified below:

1.1.1 Development

Different people conceive the term development differently. For instance, some people define development in the context of the rural setting as "a productive programme against poverty crossing all sectors"[1]. In this study, development is defined or understood in the context of a gradual multi-dimensional process, involving re-organisation and re-orientation of the entire; economic, technological, cultural, political, social and all aspects of human life including natural environment[2]. It is more than mere improvement in economic status output, increased rate of Gross National Production (GNP) or reducing unemployment. Rather, it is a multi-dimensional process involving in changing structures, attitudes and institutions as well as accelerating economic growth, reducing inequality and eradicating absolute poverty[3].

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[1] Teresa Kakooza. Obstacles to Rural Development in the Integarted Rural Development in Uganda Vol. 2; edited by Syed A.H Abidi, Kampala Foundation For African Development, 1991, 301

[2] Peter C. Lubwana, Mobilisation of Rural Women for Development in Syed A.H Abidi, editor. Ugandan Women in Development, (Kampala: Foundation For African Development, 1990), 49 and class notes on Population, Ecology and Sustainable Development, Tangaza College, 2000.

[3] Class notes on Population, Ecology and Sustainable development, Tangaza College Institute of Social ministry Year III, 2000. See also Michael Todaro. Economic Development in the Third World (4th Ed.), New York: Longman, 1989, 88

There are three basic components that underline the meaning of development as expounded by Todaro. These components are the following:

i) Life sustenance

This means all people are able to have certain basic needs without which life would be impossible e.g. food, shelter, health, clothing etc. when any of these is absent, a conclusion can be made without reservation that there is no development. This is because the basic function of development is to provide people as much as possible with the means to overcome the helplessness and misery of food, shelter, healthy and protection.

ii) Self-esteem

This implies a sense of worthness and of self-respect, and not being used as a tool by others for their own end. Every individual/society seeks authenticity, dignity, identity, honour, unity, respect, recognition and this is what development is expected to offer to the people and not material thingsonly.

iii) Freedom[4]

This means to be able to choose. It includes freedom from social solitude, slavery, nature, ignorance and other people. Further, it includes, freedom from misery, institutions and dogmatic believes. Therefore, this aspect of development involves an expounded range of choices for the society and its members. It also involves the minimization of internal problems and pursues the social goal called development. Authentic development does not only bring happiness but it also increases the range of human choices. It gives freedom to choose, greater pleasures that is, to have more goods or services or to deny the importance of the material wants.

These components relate to human needs and they are the ones constantly searched for by individuals and societies. In summary Development is the promotion of the good of

[4] Michael Todaro. Economic Development in the Third World (4th Ed.). (New York: Longman, 1989), 88

people, every person and the whole person[5]. It helps people to acquire attitudes of self-determination, self-reliance, dignity, achievement, maturity, relationships, sharing, unity and community building.

1.1.2 Technology

Technology is defined as the systematic study of techniques for making and doing things[6]. The term comes from the combination of two Greek words: *tekne'* and *logos* which mean respectively, art or craft and word or speech. Therefore in its Greek origin the word technology meant discourse on arts[7]. From the definition it can be concluded that, technology is more concerned with practical skills. Francis Stewart emphasises that, technology is all the skills, knowledge and procedures for making, using and doing useful things. He further comments that technology includes so many aspects ranging from managerial, marketing techniques, techniques involved in the production process, nature and specification of what has been produced and the like.[8]

1.1.3 Education

Generally, education is defined as the pillar in the development of human beings and society as a whole[9]. It is also described as "the Process of learning opportunities in a purposeful and organised manner through various means but not limited to school,[10]or as a process by which people are prepared to live effectively and efficiently in their environment/society"[11]. For the origin of the term education is traced to the Latin word *Educatio*, which in turn is delivered from the verb *educare*. In ancient Rome, the term *educare* was used to refer to the general concept of rearing and of bringing up. Originally, it was used to mean the rearing of plants and animals as well as the up bringing (teaching) of children to attain adulthood and independence.

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[5] Paul VI. The Development of People1967. Nairobi: Pauline Africa

[6] Bu, R.A., "The History of Technology" in the New Britannica Encyclopaedia XV Edition, vol. 28. Chicago, 1988, 451

[7] Ibid

[8] Francis Stewart, Technology and Development, second edition, Macmillan, 1977

[9] George Ssali." Improving Standards of Education in rural areas: a case of Rakai District" in the Integrated rural Development in Uganda, vol. II, Syed A.H.Abidi, ed., (Kampala: Foundation for African Development, 1991), 205

[10] Omar Jibich Abayo. The Power Base Behind Under Development in Post-Independent Africa (Nairobi: Igena Printers and Stationers 1999), 22

[11] Daniel N. Sifuna. Development of Education in Africa, (Nairobi: Iniatives Publishers Ltd, 1990), 4

Today, education as a concept is an important aspect that promotes socio-economic development in any given nation, hence a need to explore its effect on human development. Different societies in the world have different in organisation and content in their educational systems because they depend on societal needs. However, the general purpose is one, that is of transmitting from one generation to the next of the accumulated wisdom and knowledge of the societies, to prepare the young people for the future membership of the society and their active participation in its maintenance or development[12].

1.1.4 Technical Education

The combination of the two defined terms above, technology and education, is defined as the study of technology and related sciences, which involves practical skills. UNESCO in 1984 defined technical education as:

> A comprehensive term referring to the educational process when it involves, in addition to general education, the study of technology, related sciences and the acquisition of practical skills and the knowledge relating to occupations in various sectors of economic and social life[13].

The discussion in this paper on technical education will refer more to the definition given by Bogonko; "technical education, is the aspect of vocation education and training which is adjusted to technology and characterised by the utilisation of machines and tools or as the teaching of such courses as carpentry, masonry, electrical installation, mechanic, plumbing, etc."[14]

1.1.5 Hypothesis of the study.

As pointed out at the beginning of this chapter, the main interest of the study is to explore the contribution of formal Junior Technical schools in the Ugandan technical education to the development of the person as a whole. The main aim is to try to establish if the education provided serve the interests of the Ugandans to their development adequately.

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[12] Nyerere Julius K. Education for Self-Reliance. (Dar-es-salaam: Government Printer, 1965), 1

[13] B. Wanjala Kere, "The university's Future Role in vocational Education in Kenya", In Professors world peace Academy of Kenya, eds, Trends and the Future of university Education in Kenya (Nairobi: Masaki Publishers, 1990), 60

[14] Sorobea Nyachieo Bogonko, A History of Modern Education in Kenya (1895-1991), (Nairobi: Evans Brothers Kenya Limited, 1992), 158

The main hypothesis of the study is that the formulation of Technical education programmes in the country is only in respect to employment rather than the total development of the individuals. Consequently, this has led to other social problems namely; high rate of unemployment, increased distorted view amongst students and some parents regarding Technical Education, increased exploitation of skilled workers and deterioration of Technical products in quality as experienced on the ground.

In view of the stated problem, the major questions on which this study is focused are:

i) What is the role of Junior Technical schools to the development of the young people as persons?

ii) What kinds of learning materials/subjects are offered in the implementation of human development policy?

iii) What has been done through Technical Education for the development of the peoples?

1.2 Objectives of the Study

The general objectives of this study are two: first, is to seek to understand some of the circumstances that lead apprentices to be job oriented after their training. It is by understanding these causes that solutions can be sought and appropriate steps taken to remedy the situation.

Secondly, it is important to establish the kind of education that the apprentices in Junior Technical schools receive. The study seeks to evaluate whether the education offered help the apprentices to develop as persons. If it is true that the education offered is only employment or occupational oriented and not the total human development, then it is necessary to propose ways, which could assist in reversing the trend.

In more concrete terms, the first specific objective of the study is to formulate research questions, which will be helpful to establish what kind of education is provided in the Technical schools in Uganda.

A second specific objective is to analyse and evaluate the education. This will help to establish or improve those requirements lacking in preparing the apprentices to their human growth.

A third specific objective is to propose ways by which the Technical Education policy makers could take into account in future.

1.3 Assumptions of the study

The first assumption of this study is as indicated by many African Ministries of Education, that is, a Technical Education is a tool for human and national development. The other assumption is that Technical Education has a possibility to set people free from ignorance and make them self reliant in every aspect of their lives.

In this respect, apprentices are expected to master the business language of their trades at the end of their training and build up self-confidence through what they want to do in life.

1.4 Limitation of the study

The first difficulty encountered in this study is lack of supportive material to the study. A lot of material has been written on education but not on Technical Education in particular. The second limitation is of lack of finance and time. This made it difficult to collect sufficient information concerning the performance of the old apprentices of the school. For example it could have been quite revealing, to interview the employers of the old apprentices of the school as well as the apprentices themselves of challenges they face in the world of work.

While the author was in the middle of his research, there was an Ebola out break in the country. This was particularly in the Northern part of the country where the school is situated. The outbreak forced the government to close down the schools temporarily in order to curb the wide spread of the disease until further notice. Due to this, the second round of the interviews and observations, which was in the plan of the study, could not be conducted. The interviews had to be done with the help of an assistant researcher residing in the country. This took time and delayed the progress of the study.

1.5 Organization of the study

In terms of organization, chapter one locates the problem understudy. Chapter two presents a contribution of the church and the government to the introduction and development of Technical Education in the country. Chapter three outlines the

methods that are used for the study, while chapter four presents the case under study and chapter five discusses the results from the conducted analysis of the case study. In chapter six, a project proposal is presented as to how the problem observed during the analysis could be minimized, reversed or overcome.

1.6 About Uganda in Brief

1.6.1 Geographical situation of Uganda

Uganda, with Kampala as its capital city, is located near Lake Victoria in East Africa. It is mostly plateau and extends over a surface area of 241,040 square Kilometres. 49% of this is agricultural land, 24% forest, 15.4% water in the forms of lakes and rivers, while the remaining 11 % is swampy or arid land, which is unsuitable for any form of economic use[15].

According to the most recent population survey (1991) whose results were released in 1994, the country has estimated 17 million inhabitants, of whom 48.7% are children and youths of up to fifteen years of age.[16] A large majority of the population in this region is found in the rural areas and largely depends on subsistence farming for its existence. As indicated on **Appendix I,** Uganda's neighbours are: Sudan in the south, Democratic Republic of Congo in the west, Kenya in the east, Rwanda and Tanzania in the south[17].

Uganda is a country, which was once under the British rule, from 1890 to 1962 before, it became an independent state. Independence, however, has not changed technical education system to focus on the issues of human development, justice and impart necessary development skills and attitudes. As argued by some scholars, it is true that technical education system in Uganda and other countries in the sub-Sahara have colonial overtones. The policies are geared to promote wishes and aspirations of the colonialists, that is, creating a group of workers who wait to be told what to do[18].

1.6.2 Administrative and political system

The administrative system consists of the central government, the district administration and the local government. The Office of the President and cabinet is the

[15] Pieter Esterhuysen editor. Africa A-Z. (Pretoria: African Institute of South Africa, 1998), 357
[16] ibid.
[17] ibid, 356

central office through which the national government is organised. Next to this office, is the vice president, office of Prime Minister and three deputy Prime ministers then, various ministries followed by separate departments like Judiciary etc. The district administration is headed by the Resident District Commissioner (RDC). He chairs the district development committee which co-ordinates the activities of the government in the districts.

At local level, the people of Uganda still maintain the traditional system of clan leaders and chiefs.

The government system comprises of "the movement (NRM)" and its government. When the National Resistance Army (NRA) and the National Resistance Movement (NRM), took over power on 26th January 1986, under the leadership of President Museveni, all political parties were banned and new government and political structures were introduced. These are the Resistance Councils (RCs) and now known as Local Councils (LCs). They were created to promote participatory democracy and enhance political participation, political accountability, resolution of conflicts, for social economic development, security consciousness and the flow of information right from the grass root.

The lowest unit of the LC is the village local council, which consists of all residents of a village who are at least 18 years old. Each village executive committee consists of a chairman, vice chairman, secretary, secretaries of finance, security, for the youth, for women, for information, and for mobilisation and education. These are elected by the village.

The next level of participation is the Parish Local Council (LC II). It consists of all the village executive committees in a particular Parish. Their major duty is to discuss, refine and implement the recommendations of the LCs I.

Sub-county, LC III consists of all Parish local executive committees within the sub-county. Each one sits as a college to elect nine members of the sub-county local executive committee. The LC IV or county is similarly made up of LC III committee members in each given county. Each LC IV elects a representative to the National Resistance council. In addition, the LC IV selects representative for the District Local Councils (LC V).

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[18]cf. Omar Jibich Abayo. The power base behind under development in post-indepent Africa. (Nairobi: Igena printers and stationers, 1999), 22.

The system is at grass root and the people are used to it. They use it to settle minor cases/conflicts, which cannot be solved by the local clan leaders and is not yet proved to be a police case. Where appropriate the case is referred to the level of its standard either to the police or magistrate court or back to the clan leaders.[19]

1.6.3 Education system

Pre-primary school programes in Uganda are privately organized and confined mainly to the urban areas[20]. Primary education consists of seven years. The curriculum embraces arithmetic, nature study, religion, geography, history, a local language, English, arts and Crafts and home science[21].

All secondary school courses last for four years at lower level and two more years in the upper level in schools, which have the sixth form programme. A typical secondary curriculum embraces biology, English, arts, physical science and chemistry, geography, history, religious knowledge, mathematics, agriculture, home economics, music, woodwork, and Technical courses[22].

At each stage there are qualifying examinations; Primary Leaving examination, Uganda Certificate of Education or Ordinary Level Examination, and Uganda Advanced Certificate of Education Examination.

Higher education is offered at Makerere University. It has faculties of arts, social sciences, medicine, law, education, fine arts, Veterinary medicine, Librarianship, agriculture and forestry. Non-formal education is given by the Centre for Continuing Education of Makerere University. There are also various non-formal education programmes run by Ministries. Primary school teachers and other professionals are trained at various primary teachers colleges and technical colleges in the country. The National Teachers colleges and Makerere University provide teacher education for secondary school teachers. At each level above primary, there are options for pursuing academic or technical and vocational careers.

In addition to Makerere and other government training and technical institutions, there are private institutions and universities. Among these are: Mbale

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[19] Cf. Arthur Gakwandi. Pocket Facts About Uganda. (Kampala: Bow and Arrows Publishers Ltd,1992). 89-97.
[20] Internet. About Education in Uganda.htm, 27/03/2001, page 1
[21] Daniel N. Sifuna. Op. cit, 105
[22] ibid

Muslim university, The Catholic Martyrs' Memorial University at Nkozi, and the Protestant Christian University of Eastern Africa at Ndejje[23].

1.7 Conclusion

In this chapter, the study has presented the background to the study. It has presented the main problem addressed in the study, objectives, assumptions, organization and definitions of some of the key concepts used in the study. The chapter has further given a brief note of the geographical position of Uganda, its political and administrative system, and the present education system. In the next chapter, the study looks at the introduction and development of technical education in the country as presented by other scholars. It examines also critically the role of the church and the government on their contribution to the present state of technical education.

[23] Internet. Education System and Institutions., 22/02/2001, page 1.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

This chapter examines the contribution of the church and the government on the introduction and development of technical education and education system in Uganda from a human developmental point of view. The purpose is to establish the positions of the introduced and developed technical education system in the context of human development in the Ugandan society. It is the author's convictions that, besides the acknowledged importance of technical education, the government and the church at best have introduced and developed technical education without addressing the main problems that it faces. The government and the church have either ignored the existence of these problems, only paid lip services to their existence, or taken it for granted that Technical education and the existing problems harmoniously will continue to operate successfully without taking into consideration the need of revising its objectives for of the aspect of human development. Technical Education is a neglected aspect of the school curriculum and is simplified and equated to manual skills ignoring the human development aspect.[24]

The main thrust of this chapter is that the introduction and development of Technical Education and education system by the missionaries and the governments ignored the human development aspect. What was and is still emphasized is technical education for development of skills to answer manpower demand. For purpose of critical analysis, an examination of what Uganda has done to adapt technical education and educational system to human development is done. This explains the role of the church and the governments to the introduction and development of technical education in the country. It also explain why, in spite of the efforts made, the school and educational system to date leave much to be desired in the context of human development.

The chapter begins with a brief comment on the general role of technical education and educational system to human development. Then, followed by a brief historical development of technical education in Uganda.

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[24] Bigala, J.C.B. The church's Contribution to Education in the Church Contribution to Integral Development Vol. 2 Edited by J.T Agbasiere and B. Zabajungu. (Eldoret: AMECEA Publication, 1989), 170

2.2 The Role of Technical Training and Education System

The role and functions of technical education are many and varies from society to society. According to Gerhard Bunk, the general roles of technical education are to impart occupational skills, develop personality, change behaviour and to provide qualification.

2.2.1 Imparting skills

According to Gerhard, Practically, Technical training should include all educational impulses relative to learning for work in their actual execution in comprehension, as well as in thought and action. In practice, technical education is supposed to pursue not only human goals, but also technical and economic goals. This is because the role of technical education is to prepare human power. Further, more there are particular tasks that can be done only by people who have special training and have to be prepared by technical training. At present time in every developing country, there is a high demand for skilled labour[25].

2.2.2 The Development of Personality

In practice, technical education is expected to change a person's character. A person who has learned how to work and to master different kinds of work extends his/her chance of self-determination. The person becomes more independent compared to others and creative for his/her survival. This affects not only his/her vocational stand but also ones' self-confidence in life.

A person who has learned to work properly and reliably has also learned to bear responsibility for others. He/she guarantees the results of his/her work, vouches for his/her work in such a way that others depend upon it. Responsibility for ones' work presupposes the capacity for self-control and self-criticism, which is a sign of growth[26].

Work takes place in the surroundings, which are both personal and objective. A person who has learned to allocate and take responsibility for his/ her own work in the business transactions or in the organized work-pattern is also capable of cooperating with other people who work in the business

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[25] Gerhard P. Bunk. Occupational Education in Education Vol. 49/50. (Landhauster: Institute of Scientific Cooperation, 1994), 93

2.2.3 Changing Behaviour

The third aim of technical training is to bring about a complete change of attitude, which is focused on behaviour, motivation and performance. Human activities such as thinking, acting, taking over responsibility etc, are all summed up in the concept of behaviour. A person adjusts his/her thinking, acting etc to the new requirements he/she has learned. Therefore, technical training is a learning aimed at changing behaviour. Through technical education, the person is expected to change his/her way of doing things, which is in accordance to that of an expert. The person learns to mark out on the material the measurements demanded; he is capable of separating the material (sawing, cutting, chiseling etc) and he/she is able to put "the final touches" to the work. The apprentices also possess particular knowledge in order to carry out their tasks successfully. They must for example understand the system of measurement, know the properties of the material used etc. Technical training in one way or another that affects one's behaviour[27].

2.2.4 Qualification

Another aim of technical training and education system is to offer qualifications. These are awards offered at the completion of one's training. They are attained through acquiring the approved knowledge and skills necessary for the work in question and through taking responsibility for the work. Through qualification, technical training and educational system offer an individual competence and responsibility in ones' own work. It also makes one flexible in the sense of methodical abilities. This means a person becomes flexible in carrying out his/her duties, the ability to adapt himself/herself at a short notice to new task and the capability of applying knowledge to new tasks[28].

[26] Ibid, 95
[27] ibid, 96
[28] Ibid, 98

2.3 Introduction and Development of Technical Education in Uganda

2.3.1 TECHNICAL EDUCATION IN PRE-COLONIAL UGANDA.

Before the introduction of modern education in Uganda, each society made arrangements to see that all its members learned the desirable social behaviours, the necessary basic knowledge and skills for use in their daily lives. Hence, education was offered so that people could be productive and useful to themselves and to the whole society in which they lived. Ugandan societies were not behind in regard to education. They educated their young and old people, before the missionaries introduced the Western system of education in 1877[29]. Each ethnic group had an education system with aims, organisation, contents, methods of teaching, teachers and places where the education was conducted.

To achieve the above purpose, each member of an ethnic group was taught the basic knowledge, skills, and desirable social behaviour, customs, history, geography, biology, chemistry, agriculture, religion, psychology, philosophy, economics and politics to meet their daily needs unlike today. The education was well integrated and effective. The content of these subjects was not static. They changed as new knowledge and skills were discovered and those, that ceased to be useful, were discarded. Today however, the policies are just reinforced despite their failure to meet the expectations of the policy makers and the nation.

Youngsters were taught the customs, desirable social behaviour and laws of their ethnic group so that they would be good and hard working citizens. This knowledge also helped especially the boys to administer laws if they became chiefs or leaders in their ethnic group. They were taught many skills to help them do things and make things. For example, a boy was taught how to build a house, how to use spears, bows and arrows and shields to defend himself, his family and his ethnic group.

He was taught how to raise and look after cattle, goats, sheep and poultry. These helped him produce milk and meat for himself, his family and for the rest of the society. He was also taught how to make cloth from skins and bark trees so that he could clothe himself and members of his family and get what to sleep on at night, and to barter (sell) to the other members of the society. On the other hand, a girl was

[29] J.C Ssekamwa. History and development of Education in Uganda. (Kampala: Fountain Publishers Ltd, 1997).1

taught how to produce food crops, cook food, nurse children and how to look after a home.

Thus, boys and girls were taught good behaviour in society in different situations. This knowledge brought forth polite, hard working and considerate people and enforced order in the societies.

The African indigenous education of Ugandans made sure that every citizen in the ethnic group was taught the basic knowledge and the basic practical technical skills. Both the knowledge and the practical skills helped the learner to be useful to himself/herself, to his/her family and to the rest of the society in which that person lived. The society treasured skilled work much[30].

2.3.2 TECHNICAL EDUCATION IN COLONIAL UGANDA:

In Uganda, as in many African countries school (western education) was introduced and for many years controlled by European missionaries; Catholics and protestants who arrived in the country in the years 1877 and 1879 respectively[31]. Apart from the need to Christianise and to make people literate, the missions became conscious of the need for "technical", sometimes called "manual" skills,[32]which marked the beginning of western technical education system in Uganda.

This humble beginning of technical education in Uganda was influenced more by the internal needs of individual missions for buildings, technical works, etc and the difficulty of finding trained personnel to supply these needs. By 1923 the White Fathers missionaries in the South and the Comboni missionaries in the north were running important technical establishments[33]. These establishments had departments of

(a) blacksmithing, wheelwighting, tinsmith,

(b) woodwork,

(c) shoemaking

(d) moulding roof and floor tiles, brick making

(e) masonry

(f) printing, bookbinding and

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[30] ibid

[31] ibid, 3

[32] Asavia Wandira. History of modern education in Uganda. (Nairobi: East African Literature Bureau, 1972), 176

[33] Ibid, 177

(g) drawing[34].

The apprentices learnt the trades on job under the instruction of lay Brothers Afterwards they sought employment with the mission, Government or industry. From these, the technical education continued to grow out of the needs of the mission stations. There was no proper policies or planning in comparisons to the approach to the establishment of academic schools until the intervention of the British colonial government with its policy on technical education in 1925[35].

Uganda became a British Protectorate in 1876 and it was not until the 1920s that the government showed an interest in education in the country. The interest was more on giving technical education to Ugandans rather than academic studies. This was based on the following reasons: First, they needed well-prepared labourers in order to exploit the vast resources of the country. Secondly, being the colonisers, they did not want to sharpen the Africans intellectually, due to the experience they had with the Indians after training them;[36]and thirdly, because the number of Europeans volunteering to work in Africa had reduced after the First World War. The majority lost the interest of working in Africa and they preferred to remain in their country to repair the damages caused. This led to shortage of personnel especially in the technical field.

The colonial government in its effort to promote technical education recommended new ways. The first one was to support financially the existing technical mission schools, which they did[37]. The second was promotion of technical education in the government departments. The government organised technical workshops serving as schools attached to the department of lands and survey, the medical department and the public work department. The purpose of these technical workshops cum schools was to produce much wanted technicians with skills necessary to run the work carried out by the above-specialised departments. Training in these departmental schools did not stop until 1953 The reason was that all technical education was to meet all the

[34] ibid. 176
[35] Ssekamwa. Op. cit., 84-85
[36] Sorobea Nyachieo Bogonko. A History of Modern education in Kenya (1895-1991), (Nairobi: Evans Brothers Kenya Ltd. 1992), 158
[37] Ssekamwa. Op. cit. 84

needs of the country and to stop duplication that was being observed in the above departments[38].

The third way of teaching technical skills was through the proper establishment of government technical schools. The government set up its first technical schools in 1921 at Makerere hill. From 1922 it was renamed Kampala technical school to distinguish it from Makerere College, which was on the same hill. The second government technical school was established in 1930 at the foot of Mt. Masaba near Mbale called, Elgon Technical School[39]. The pupils graduating from missionary schools were joining these technical schools at the initial stage. The main courses offered were shoe making, plumbing, tailoring and carpentry.

The fourth arrangement for technical education was its inclusion in the primary school curriculum. Here a pupil was supposed to acquire the African traditional handcraft skills in order to produce such simple articles for domestic use such as: mats, stools, embroidery, baskets, brooms and ropes. These skills were encouraged because the majority of pupils could not go beyond primary school level. Hence, these skills was to equip them to live better lives in the countries[40].

From 1930, in the drive to promote technical education and skilled work, the literate academic set of schools were streamlined into two separate sections[41]. One section was called the "middle schools", which was intended to give a purely literacy course. The other section was called the "central school", running practical courses combining subjects in agriculture, carpentry, pottery, iron work, brick making, building and binding. The fees in these central schools were lower in comparison to those paid in the academic middle schools. This was mainly to attract pupils to the practical schools.

Some successes began to be registered due to the efforts of developing technical education through central schools. But the success of these central schools was short lived. The schools were discontinued in 1938[42] became unpopular, due to the Ugandans' opposition to their establishment and their demand for more literate schools. They opted for literate education thinking that, it was the only quick way to be equal to the Europeans. With the discontinuance of the central schools, there

[38] ibid, 85
[39] ibid
[40] ibid
[41] Ibid

remained two venues where pupils would acquire technical skills through the education system. The first one was through the primary courses using handwork lessons and the second through proper technical schools.

The technical schools, which remained when the central schools were discontinued in 1938, were post primary institutions. They were very few in comparison to literary schools. For example, between 1935 and 1952 there were two government technical schools, namely Kampala Technical School and Elgon Technical School in Mbale. In addition, there were four mission technical schools; St. Joseph Technical School, Kisubi, run by the White Fathers; Nsambya Technical School of the Mill Hill Fathers, Gulu and Arua Technical Schools under the Verona Fathers. Any other technical education that could be obtained was through the schools attached to the departments of lands and survey. Others included, the medical, and the public works department and in a number of mission technical small schools described by the department of education more as workshops for meeting mission needs[43].

From 1950 the industrial life of the country took a different turn. Small-scale industries had developed and needed an increasingly large number of technicians (skilled workers). The technical education set up to prepare these technicians could not meet the demand. The Uganda protectorate government in order to meet this challenge, first opened workshops nearly at every primary school and in few junior secondary schools. Secondly, it established technical schools under the names of Rural trade schools, farms schools for boys and home craft centres for girls. Thus, by 1960 there were 66 trade schools for boys and 20 home-craft centres for girls in the country. Thirdly, from 1951, the old technical schools: Elgon, St. Joseph-Kisubi, Gulu and Arua technical schools were up-graded to the status of junior Secondary technical schools. Besides these, several more junior secondary technical schools were established under the Uganda protectorate and the local government administrations. Such technical schools under the government were: Lira, Soroti, Fort-Portal, Kahaya, Masaka and Kabale technical schools, just to mention but a few.

The fourth was the establishment of Kampala technical institute at Nakawa as a senior secondary technical school. Students at these schools followed courses leading to the City and Guilds examination of London. Out of these it was envisaged to get

[12] Ibid
[13] ibid. 86

students who would proceed to the Royal technical college-Nairobi, which opened its doors to the students in 1956. Later, these students could pursue degree and diploma courses[44].

The above sketch completes the historical development of technical education during the colonial days in which its development was intended to reduce academic or literary education from the education system in and to exploit the resources.

2.3.3 TECHNICAL EDUCATION IN POST-COLONIAL UGANDA

Uganda placed considerable importance of the role of education in promoting economic and social development after the achievement of independence on the 9th October 1962[45]. Convinced that education can promote economic and social development besides the serious shortage of skilled human power; Uganda devoted the early years of independence to the rapid expansion of educational facilities and the training of qualified personnel to manage its economy; resources and administrative institutions. The expansion and reform in education system were also motivated by political pressures (nationalism) to give confidence to the Ugandans that they were capable of solving their problems and are independent.

The government in 1965 revised the whole system of technical education in the country[46]. Five, out of the ten technical schools were expanded to take in more pupils[47]. The remaining schools plus the farm schools, Rural trade school, Home-craft centres and the modern secondary schools were turned into academic secondary schools. The expanded technical schools became technical Institutes and began to provide a four-year craft courses leading to the city and guilds examinations.

The process of developing technical schools system gained momentum such that, by 1975 they had developed two types of technical schools at lower level. The former ten rural trade schools were renamed technical schools while the former five technical schools became technical institutes. The first offered a three-year post-primary course in carpentry, brick laying and masonry, tailoring, electrical installation, tannery and shoe making, pottery, plumbing, motor vehicle maintenance and fitting. By 1975 the annual output from these schools was about 390 students.

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[44] Ibid. 89

[45] Ssekamwa op. cit.4

[46] Sorobea Nyachieo Bogonko. Reflection on education in eastern Africa. (Nairobi: Oxford University Press, 1992). 158

Those who did well in the technical schools were enrolled together with the O-level holders in technical institutes for two-years. At the end of the two years, the students received the technical certificate of the East African Examination Council or Uganda National Examinations Board. The institutes offered a wide range of courses both at craft and advanced levels taken at technical schools and in painting and decoration, machine craft and motor vehicle engineering. Enrolment in the institutes increased from 1,400 in 1970 to over 2,000 students in 1974. There were 487 and 888 graduates in 1973 and 1974 respectively[48].

Despite the vagaries of Idi Amin regime (1971-1979), which spelt the decline of Uganda's industry, thereby rendering it impossible to implement a meaningful plan for the development of technical education[49], the growth in technical education endured. However, it was after Amin's auster that real expansion occurred. The growth was so rapid that by 1987, there were 30 technical schools enrolling 3,621 students for crafts courses and 24 technical institutes with 2,974 students studying advanced crafts courses. And between 1983 and 1986, 20 technical institutes and 21 technical schools were established[50].

2.3.4 THE PRESENT TECHNICAL EDUCATION SYSTEM IN UGANDA

The present technical education system in Uganda reflects its historical establishment and development and not much have changed for the better. The governments continue to adopt and follow the colonial system of technical education[51]. Its main objective is to produce more craftsmen and artisans to meet the demands for human power and development[52]. The technical schools are at all levels (see **Appendix II:** List of technical schools) to give chance to many pupils who finish primary schools and are unable to join the academic secondary schools for one reason or the other.

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[47] Ssekamwa, op. cit. 165

[48] Bogonko. Op. cit 159

[49] United Nations Educational, Scientific and Cultural Organisation. Uganda Report (Paris: UNESCO, 1985), 18

[50] Ibid, 87-88

[51] Omar Jibich Abayo. Op. Cit. 22

[52] Ministry of education. 951 carpentry and joinery syllabus for junior technical schools in Uganda, (Kampala: Ministry of Education, 1973) p.2

The technical education system includes: Junior technical schools, Technical Institutes, Uganda Technical Colleges and Uganda Polytechnic[53].

2.3.4.1 JUNIOR TECHNICAL SCHOOLS

These offer three years post-primary courses. The courses include carpentry, block laying and masonry, tailoring, electrical installation, tannery and shoe making, pottery, plumbing, motor vehicle maintenance, agriculture and fitting. The requirements for entry are certificate of fitness for manual/hard work from a recognised doctor. Primary school leaving certificate possession with at least passes in English and Maths. For admission to the technical schools the pupils apply through the Ministry of Education at the end of their primary school level. Others apply directly to the schools of their choice and they are admitted after passing the interviews given by the schools. These schools are found at least one to two in every district in the country and they are under local government[54]. At the end of three years, pupils sit for the examinations set by the Uganda National Examination Board after which the successful ones obtain a Uganda Junior Technical Education Certificate.

2.3.4.2 TECHNICAL INSTITUTES

These offer a two-year course on the courses mentioned above. Qualifications for entrance are Junior Technical School Certificate or "O" level certificate. The qualification obtained at the end of two years, is first Craft Certificate with Uganda National Examination Board[55].

2.3.4.3 UGANDA TECHNICAL COLLEGES

In realising the high demand for technicians in 1984, eight technical colleges were established. In existence today are; Elgon (Mbale), Masaka, Kichwamba and Lira, which are being mentioned as associates of the up-coming Kyambogo polytechnic[56]. These colleges offer advanced certificates in carpentry, motor vehicle mechanics, block laying and masonry, electrical installation, painting and decorating, and plumbing. The

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[53] Ministry of education. Education for National Integration and Development: Report of Education Policy Review Commission. (Kampala: ministry of education, 1989), 87

[54] Mugisha Odrek Rwabwogo. Uganda District Information Handbook. (Kampala: Fountain Publisher Ltd, 1992)

[55] Ministry of Education. Op. cit, 87

[56] Bogonko. Op. cit. 164

courses are of one-year duration. The requirements for admission are the possession of the first craft certificate and approved one-year industrial practice or training. The colleges also offer ordinary and high diploma courses in electrical mechanic, and civil engineering and building[57]. The majority of its recruits are 'A' level candidates and advance craft certificate holders. The diploma course is for two years.

2.3.4.4. UGANDA POLYTECHNIC-KYAMBOGO

At independence, Uganda had the Kampala technical institute, which offered courses for both technicians and commercial middle-level professionals. By 1964, the two courses had been separated. The technician fields were taught at the Uganda Technical College (UTC) at Kyambogo, which today has risen to a polytechnic, the commercial ones were conducted at the Uganda Commercial College (UCC) at Nakawa. The polytechnic offers courses and qualifications offered at college level but also runs diploma courses in industrial ceramics and training teachers for various categories of technical institutions in the country[58].

2.4 Conclusion

The catholic and other churches have played a significant role, particularly in promotion of technical education in Uganda from the beginning of its mission until today. Both the church and the government have played a big role to the present situation of technical education and education system in Uganda. The early missionaries realized that in order to prepare people to read the Bible, catechism, spiritual books and to contribute to the development of the country, the best way was to build schools and to introduce technical training. Later on, the government realizing the importance of education to the Ugandans, she joined hands to work together with the churches for the development of technical and education system in Uganda.

Today, technical education and education system in Uganda is well developed as observed above. A good number of youth have access to the technical training. However, the quality is still poor. The training and the system still has the colonial over tunes which aimed at imparting knowledge and skills to Africans for the benefit of the colonialists to tame and exploit the vast resources of Uganda. Both the church and the

[57] Ibid. 163
[58] Ibid

government contribute to the development of technical education for manpower not for human development as observed above. The church needed skilled labour for the building of her missions and the government for the running of her various departments for national development The chapter has briefed on the introduction and development of technical education and education system in Uganda. In this way, it has shown the contribution and the role of the church and the government in the development of technical education and education system in the country and, the main aim of the church and the government in their effort to contribute to technical education. The next chapter, discussion is on the procedures and methods that were used to come to the decision of analyzing the chosen case study.

CHAPTER III

METHODOLOGY OF THE STUDY

3.1 Introduction

The preceding chapter, concerned studies conducted on the introduction and development of Technical education and educational system in view of human development. It has outlined the contribution of the government and the church in the development of Technical education and educational system in Uganda. This chapter begins with a brief comment on the research instruments used for this study after which the steps, criteria and methods of data collection are outlined.

3.2 Research Instruments

As indicated in chapter one, the main objective has been to investigate how the goal of educating for personal growth/development within the Ugandan context is realized at the level of technical training. To establish this, the curriculum for Technical training has been the major target of investigation. In the process two-research methods namely, participant observation and interview have been used. At this juncture, it must be pointed out that the research study has been conducted in stages.

First, before embarking on the actual exercise of analyzing contribution of technical education to human development, advice was sought from the coordinator for Long Essays and Field attachments at Tangaza College in the Institute of Social Ministry. The topic of study was approved and permission granted to go for field attachment in the field of the study. Permission was also asked for and granted, to observe how technical education curriculum is applied in the actual environment from St. John Bosco Junior Technical School. The main aim here was to get the first hand information and put the study within the Ugandan context[59].

Secondly, in-depth interviews were conducted on historical development of Technical Education and its contribution to human development in the area, and the teacher's overview about Technical Education. The main questions were those that could assist the author to establish the underlining reasons/factors that hinder the contribution of technical education to human development. For a successful and

[59] C.R Kothari, Research methodology: method and Techniques, (New Delhi: Wiley Eastern Ltd, 1978), 117

consistency, an in-depth interview guide was prepared and used. They helped to collect relevant information to the problem (see **appendix III: in-depth interview guide)**.

Thirdly, participant observation was made in the actual school and classroom situation. The aim was to discover how the curriculum was being unfolded in the actual school environment and to see if it really contains any aspects of building persons[60]. The observation guide/questionnaire prepared by the author was used here for systematic observation (see **appendix VI).** This was intended to help the researcher to be consistent to the research problem and to collect relevant information. It is after investigation of the results from the participant observation and analysis of the curriculum/training that the impact of technical education in the Ugandan educational system is concluded.

3.3 Sampling after the Field Experience

The field experience was largely a case study, whose data gathering technique of participant observation focused on St. John Bosco Junior Technical School in Lira district in the Northern region of Uganda. The particular place was the classroom/ workshops situation of the years I to III of carpentry section and the whole school on other activities together with their teachers. The interest was to observe how the apprentices responded to the school curriculum and how the teachers tried to unfold the curriculum in their attempt to translate the Ugandan Educational goal of helping the youth to grow as persons.

3.4 The Choice of the Research Location

During the participant observation, it was felt that the study should concentrate on a small area so as to gather as much in-depth information as possible. The hope here was that this would enhance the richness of the research information and experience. St John Bosco was specifically chosen as a site for the study for its long history of existence and its level, which is a premature outlet to the world of work. The apprentices at this level are expected to be well prepared in order to meet the expectations of the world. The other reason based on the one above is that, the school represents what one might observe in many junior schools in Uganda, which are available, almost at every corner of the country. The school is not a boarding school.

Majority of the apprentices commute from their homes and the few who come from distant homes, rent around and live on their own.

The choice of the school within Ngetta area was further determined by the fact that, there is a community of a religious congregation to which the author belongs and hence, could get accommodation easily and be helped for other necessities in his research study.

3.5 Research Frame

The author proceeded to the field at the end of May 1999 and stayed there for an initial period of three months. As has already been indicated, the research study was conducted in stages. The first two weeks was spent on familiarisation with the activities of the school by working in the production workshop, on the other hand waiting for the apprentices to report from holidays in one-week time. The weeks were also used to survey the school environment and the surrounding institutions and activities of the people in the area. From mid June 1999 until mid August in-depth interviews were conducted with teachers and apprentices within the school. The permission was also sought to sit in classes and to participate in every activity of the curriculum so as to observe and analyse the richness of the technical education curriculum to human development.

At the same time that is mid June to mid August 1999, the author participated in active teaching. Although he did not teach full time, he took some lessons of technical drawing to the second years, Christian Religious Education (CRE) and Mathematics to all the apprentices in the school whenever the teachers of the subjects could not be present for one reason or another.

In view of the phenomenological perspective and the already underlined exploratory nature of the research study, the usefulness of the participant observation period was that it helped the author to discern, which of the research instruments to concentrate upon, so as to come up with meaningful results within the rather limited time at the author's disposal. For example, since the genuine contact the author had with the teachers was rather limited, he opted to concentrate on the curriculum used by them. And even here, the opportunity to participate in the activities of the school like teaching helped the author to analyse the curriculum in depth.

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[60] James P. Spradley. Participant observation. (NewYork: Holt, Rinehart and Winston, 1980), 55

3.6 Conclusion

Since human behaviour is significantly influenced by the setting in which it occurs[61], namely; the school in general and the classroom and workshop in particular, where the curriculum is normally implored in view of achieving educational goals at the level of formal schooling, was included in this study as one of the major source of data.

Because of the nature of participant observation research demands that nothing be considered as "trivial", that everything has a clue, which might unlock a more comprehensive understanding of what is being studied. The research relies more on words than on numbers. That is, it draws more from the "humanistic Paradigm" as opposed to the "naturalistic" or "positivistic" type of research. In the next chapter, a case study of St. John Bosco Technical School and the curriculum in the school is presented. The chapter evaluates the training programme offered in the school.

[61] ibid. 3

CHAPTER IV

TRAINING AND DEVELOPMENT OF THE APPRENTICES: A CASE STUDY OF ST. JOHN BOSCO JUNIOR TECHNICAL TRAINING SCHOOL - LIRA IN UGANDA

4.1 Introduction

Having looked at the instruments that were used for the study, this chapter, which is a case study for analysis, begins with a brief review of the social situation of the area in which the school is situated. This is followed by historical background of the school, purpose and objectives. Hereafter analysis is made on how the apprentices are trained by looking at the school curriculum and other activities, which enhance the training. The quality of the training provided by the technical institutions is important for the assessment of the efficacy of the training programmes themselves and for its effective contribution to human growth.

4.2 Social setting Review

4.2.1 Population and ethnic groups

The main ethnic group within Ngetta and the district/diocese as a whole is Langi Numerically, this is one of the major ethnic groups in Uganda with about one million people. Linguistically, they are very close to the Acholi further North, but culturally they are closer to the pastrolists Iteso and Karimojong. Like the Iteso they are cattle rearing people who are also involved in agricultural activities. The language spoken here is Lango, one of Uganda's Western Nilotic languages and English is used as the official language. Within Ngetta, other few ethnic group members / families are found. These are the Acholi, and Iteso. They are settled in the area because of their long time service in the institutions around or because of their parents who served in the institutions for along time[62].

All the ethnic groups found in the area have a patrilineal system of inheritance. In this system, the wife moves to the village of the husband and does not have any property rights. The oldest son usually inherits the land and divides it among his brothers and himself. In the patrineal family system, control over land is thus in the

hands of men and the women depend on their husbands' family. In case of those just settled in the area the young men buy land with the help of their families before they bring the wife home[63]. Traditionally the wife is taken home after the token (dowry) has been paid to the parents of the girl. This has effect on the growth of Christianity because the couple is not allowed to wed in the church until the dowry is paid no matter how long the young couple can stay together[64]. Economically, the system is also a burden to the family because instead of catering for the needs of the new family, the families struggle to get the dowry before they can be taken to court.

4.2.2 Religion

Most of the people in Ngetta and Lango are Christians. The Catholics are about 65%[65], a few Protestants and other Christian sects members. Very few people in the area follow traditional religion and they are not organised. Moving around the homes one finds small shrines within house compounds sheltering traditional objects to which they offer sacrifices. These traditional objects are inherited from the fore parents. Because of fear and ignorance created in them during their time of instruction while young, it is difficult to abandon them or the religion.

Despite this variety of religions, the people in the area live together in harmony especially when we look at the history of Christianity in Uganda as a whole, where there were great differences, bitterness, and conflicts among different religious groups.

4.2.3 Social Services

Ngetta is a complex area full of institutions of learning and social welfare services, which have come up in response to the people's needs in the area and the diocese as a whole besides St. John Bosco Technical School.

There are three primary schools, which go up to standard seven. There are two secondary schools, one for girls up to form four and the other one for boys, which goes up to form six and it has about 1100[66] pupils. Both basic institutions are boarding schools and are Catholic founded. There is also a national teachers' college of two

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[62]Cf. Arthur Gakwandi. Pocket Facts about Uganda. (Kampala: Bow and Arrow Publishers Ltd, 1992), 32

[63]Robert Okello. An interview. St. John Bosco School. Lira, 23rd July, 1999

[64]Fr. Moroni. Interview. St. John Bosco Parish. Lira, 24th July, 1999

[65]Lira Diocese. Uganda Martyrs centenary celebration booklet (Lira Diocese: Unpublished, 1999), 2

[66]Mr. Guido. An interview at St. John Bosco on 7 th July 1999.

years duration for one to qualify for diploma in secondary education and primary school administration. Within, there is also a National Catechetical Centre, which offers a three years formation course to the catechists of the diocese and few others from other dioceses.

Besides the institutions of learning, there are also social welfare services offered in Ngetta like police, dispensary/health centre with about twenty beds, a beautiful Catholic Parish church, the main road; Lira - Kitgum which passes through the area. And the Babies Home for babies whose mothers died at birth or are found thrown away after birth for various reasons.

4.2.4 Economic activities

The most economic activity in Ngetta is agriculture, which provide employment to the people in the area. The people practice traditional agriculture system using local implements. In the past there was an agricultural institute in the area which was set up to help the people to improve their farming but unfortunately due to other reasons it died a natural death before producing the expected fruits[67].

The major food crops cultivated in the area are: beans, finger millet, cassava, sim-sim, pigeon peas, groundnuts, sunflower, cow peas, and bananas. Among the fruits, vegetables and spices found in the area are oranges, cabbage, tomatoes, passion fruits, pineapples, and onions[68]. The people also produce cash crops like coffee and cotton, which they sell in addition to their surplus food crops to meet their domestic needs e.g. School fees, clothing and medication.

The people in the area used to keep cattle and goats in large numbers but they were rustled by the Karimojongs in 1987 leaving them bare handed. Today they still keep cattle but in small numbers.

The people of Ngetta are very lucky because of a small oil industry, which is at their disposal. The industry buys the sunflower produced in the area and make cooking oil from it. The people of Ngetta are the main beneficiaries of this industry because they are able to get cooking oil at a cheap price and to sell their sunflower product within the area. While selling the sunflower, the people have a choice either to receive cash or cooking oil as their pay.

[67] Bro. Petersen. Interview. St. John Bosco on 16th June 1999.

Besides farming, the people of Ngetta are also privileged for the presence/services of the institutions in the area. Many have job opportunities and are employed as cooks, watchmen, teachers, drivers, secretaries, cleaners, etc.

4.3 The project's historical background, purpose and objectives

4.3.1 History

The history of St. John Bosco Technical School in Ngetta goes back to 1955[69]. It was first opened 25 years later after the introduction of the Catholic faith in the area, which is officially recorded at 1930[70]. The school ran only for about ten years, 1955-1964, when it died a "natural death" because of political "fever" (independence period). With the 1964 Education Act, all government-aided schools were declared open to pupils from all denominations and state controlled schools. This resulted in the closure of private run schools like St. John Bosco and the discouragement of the church in her role in education[71]. At the school's foundation, there were two sections in the school; carpentry and tailoring. It functioned well according to the records and it supplied the country with excellent and skilful workers. The apprentices, who passed through this school, were found nearly in every workshop in the country, and some were first class tailors[72].

Here after, the school was reopened in 1993 with the initiative and sponsorship of the Comboni Missionaries' Community of Ngetta Parish, who have also the pastoral care of the Parish.

At its reopening in 1993 the school started with one section only, thus carpentry and joinery put at the duration of three years for one to complete the course. One year later two more sections were started; building craft and mechanics for the duration of two years. In 1996, the two later trades stopped offering courses due to lack of personnel. 1999-2000 academic year, the mechanics section has restarted to make it two courses offered in the school. All this time the school has been run without official government recognition. This year the school got a license (recognition by the

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[69] Fountain Publishers. Uganda Districts Information handbook. (Kampala: Fountain Publishers Ltd, 1992), 2 &58

[70] St. John Bosco. School documents. (Lira: unpublished, 1996), 1

[71] Lira Diocese. Op. Cit. 4

[72] J.C.B.Bigala "The Church's contribution to education" in Church contribution to integral development, edited by J.T. Agbasiere and B. Zabajungu. (Eldoret: AMECEA Gaba Publications, 1989), 176.

[73] Lira Diocese. Op cit

government). The struggle now is to get a centre number. This will permit the apprentices in the school to sit for government exams and to obtain a government and other companies recognised certificates in their trades.

4.3.2 The purpose[73]

The school, right from its establishment had two main purposes to accomplish and these are;

- To prepare well skilled workers with full training for the missions in the diocese for the maintenance and for more construction of the church infrastructure in response to the increased number of Christians and their communities in the diocese. And to contribute to the rebuilding of the country after different regimes and wars had destroyed the country in the years 1971-1986.
- To provide training opportunities to the increased or rising number of school leavers, which will enable them to be self-supporting.

4.3.3 Objectives[74]

The objectives of St. John Bosco Technical Training school are in line with its purposes of establishment and they are:

1) To train the youth in useful skills and to help them to be self-reliant.
2) To provide skilled training to the youth from poor families in the diocese and those desperate youth (orphans), who can not go further with their secondary studies or join other higher institutions of learning because of financial problems and other circumstances.
3) To create job opportunities for the youth in the area through self-employment in their trades or by joining other working places.
4) To form the youth to perform their roles as responsible citizens and Christians in their societies/communities.

4.4 Entry school requirements

The Admission requirements to St. John Bosco Junior technical school and all Junior Technical schools in the country are: a success in the interview held in the

[73]St. John Bosco. School Official documents. Lira: unpublished
[74]ibid

school by the staff; possession of a Primary School Leaving Certificate with at least passes in English and mathematics or secondary schools drop out; possession of a medical examination report to confirm one's fitness for physical work and a referrals/recommendation letter from either the Parish priest, employee or parents/relatives/guardians.

4.5 Training of the Apprentices

This is the core activity of the school. It offers two courses; carpentry and joinery, and motor vehicle mechanics. The courses are of three years duration/period each. The training is offered practically and theoretically. At the beginning of the school, theory was offered just to give the apprentices the necessary practical knowledge to carry out their duties satisfactorily and competently. But today it is given to prepare the apprentices for Government Junior Certificate examinations and for further studies to those who wish. Below are the courses and subjects offered to accomplish the activity of training the apprentices.

4.5.1 Courses and subjects offered in the school

4.5.1.1 Mechanics

The course was revived at the beginning of 1999 academic year after its closure in 1997 due to lack of personnel[75]. There is a well-prepared head of department or section helped by some part time teachers. The apprentices are trained to acquire basic knowledge in metal work and motor vehicle work.

In metal work they are taught theoretically; general rules and regulations in the workshop. They are given instruction on safety precautions related to machine and tools likely used in their section. The benches vice, its construction, care and use. Vice clamps, common fitting tools; their care and use. Elementary principles of marking out, care and use of marking out tools.

The care and use of twist drills. The importance of correct sharpening of tools. The micrometer reading. They are introduced to the construction, action care and use of micrometer. They are introduced to properties and uses of common irons and steel; effects of properties on use; identification of these irons and steels by workshop methods. Soldering fluxes and their use Composition of common solders and fluxes.

Methods of soldering. Common sheet metal working tools; their care and use. In practicals; the apprentices are involved in simple exercise involving the use of vice, hammers, files, spanners, hacksaws, centre punch drills, chisels and scrapers; squares and dividers. The use of marking out tools and exercises involving filling definite shapes and dimensions. The use of soldering irons, fluxes and solders. Soldering of simple butt and grooved joints. Simple bending, forming and folding of simple sheet metals. Simple wiring of sheet metal joints and soldering.

In motor vehicle work, the apprentices are taught to get basic knowledge in operation of generators, water pumps; maintenance of simple equipment such as wheelbarrows, ploughs, etc. They are also trained to acquire basic elements of fitting and servicing motor vehicles; to be able to do a proper service and to maintain tools and equipment.

In order to meet the above activities the core subjects; motor vehicle technology, science, calculation, technical drawing and workshop practice are offered in the school. The subjects are approved by the Ministry of Education in its syllabus for the junior technical schools. They are aimed at ideal course to give a general background to all aspects of metal work and motor vehicle work to the apprentices in the junior schools[76].

4.5.1.2 Carpentry and joinery

This is the main course offered in the school since its foundation and it is unwavering. It has also a good number of apprentices.

The subjects offered in this course include: Technology, Building science, Technical drawing, applied mathematics and workshop Practice, which is the application of the theory taught[77].

4.5.2 Sub curriculum subjects/activities

Besides the subjects offered above, there are sub curriculum subjects/activities offered to all the students in the school and they are compulsory but are not examinable both either by the school or the government. These subjects/activities are

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[75]Mr. CP Okello. Interview. 31st June, 1999 Lira, Uganda

[76]Ministry of Education. Motor vehicle Maintenance and General fitting Junior Technical school Syllabus. (Kampala: The Uganda National Examination Board, 1974), 1

[77] see **appendix** V For the contents of the subjects (syllabus)

Christian Religious Education (CRE), English and sports. CRE is offered to help the youth to deepen their faith and to come to appreciate work as God's plan or invitation to join Him in His act of creation by becoming small creators for continuity. English is offered to help the youth to improve their English for better communication and study, since majority of them are primary school leavers and secondary school drop outs.

Every Friday in the afternoon, there is one period free for sports and other club activities in the school. But so far since the apprentices are interest in football only, the other sports and club activities are out of existence. The school provides all sports necessities. The organisation and attendance of the sports activities among the apprentices is very poor because many apprentices rush for their homes since the school is a day and Friday is already a weekend.

The daily activities of the school are elaborated by the school timetable **(Appendix VI).** The school starts at 8:00 am with general cleaning like sweeping the classrooms, slashing the compound, etc, followed by daily assembly at 8:15 for prayer and few announcements from the teachers and the prefects. Here after at 8:30 am workshop practice commences in all the sections with few exceptions till 12:30 p.m. when the school breaks off for lunch. The school resumes at 2:30 p.m. for theory in the classes and knocks off at 4:30 p.m. The school timetable follows the government school timetable system e.g. one-hour duration of a period and the time; technical schools break off for holidays after a three months term in the schools.

At the end of three years, the apprentices are awarded a certificate of merit by the school. They also sit for government examinations and those who do well in this exam are awarded Uganda Junior certificates of technical education.

4.6 Conclusions

The chapter has looked at socio-economic situation of the people of Ngetta. It has also presented the historical background of St. John Bosco Technical School, which has really came into existence out of felt the need. It has also looked at the purpose, objectives and the training programme of the school. As observed in the chapter, the purpose, objectives, activities and the contents of the subjects are just in line with the traditional and government objectives. That is, of imparting skills. In the following chapter, the problems observed as hindrance to the contribution of technical education to human development in the school are outlined and also possible solutions are forwarded.

CHAPTER V

GENERAL OBSERVATION AND CONCLUSION

5.1 Introduction

The present study is mainly focused on the contribution of Junior technical schools to human development. In the previous chapter, the study has attempted to analyse what goes on in training apprentices in technical schools in Uganda. In this concluding chapter to the study, the major problems noted in the case study analysed are outlined, and possible solutions for them are put forward. Comment is also made on the challenge of educating the youth for creative, initiative, adaptive, analytic and intellectual capacities as well as character.

5.2 Major difficulties/ findings observed in the study

In the case study analysed, even if it is to a very limited extent, it is clear that technical education in Uganda does not take into consideration the aspect of human development. It is skill and knowledge or employment oriented. However there appears to be many problems, which in one way or another affect the quality and purpose of Technical training in Uganda. These include; shortage of tools, materials/equipments, poor preparation of the teachers, lack of interest among the apprentices for theory subjects and limitation of the subjects offered and their exam orientation.

5.2.1 Unspecific aims and objectives

The school's objectives are unspecific. They are job oriented and there is nothing concerning preparing the students to human growth or how to live and contribute to their societies. The objectives talk of imparting skills, job opportunities, and providing skilled workers. They ignore the aspect of human growth and a total preparation of a human person and this is properly reflected in its training programmes, which implements the objectives.

5.2.2 Lack of Training materials

The quality of technical education cannot depend on proper teaching methods alone. Good education also requires relevant learning and teaching aids like books,

tools and machines. The problem of inadequate equipment/supplies in the school is found to be most serious. During the study it was found out that the apprentices shared tools and other necessities for example in a workshop of twenty students there were two workbenches. This is due to lack of funds by the school to buy enough equipment and training materials and also due to the fact that other materials like books used in technical schools in Uganda are written and published outside the country[78]. They are expensive and in most cases they are just available to the teachers, probably one book in the whole for those schools, which are in a good shape to get one. This delays the training progress of the trainees and creates high reliance of the students on teachers.

5.2.3 Unavailability of qualified teachers

The teacher or instructor is at the centre of the educative process and all the talk about teaching techniques, practical activities in workshops are meaningless unless there are enough teachers and well prepared. An inadequate supply of teachers of necessity compromises the quality of the educational process. A shortage of instructors implies that they will be overworked and responsible for too many students. They will not have time to prepare lessons, practical activities and will not be able to attend to individuals or special needs. This leads to frustration and a feeling of inadequacy among teachers. The result is the general deterioration of the quality of teaching.

Due to shortage of qualified teaching staff at all levels of technical education in the country, St. John Bosco Technical school is not spared from this problem. The school gets its teachers among the teachers working in the secondary schools and among technicians who are willing to teach. Among the teachers, there is none prepared professionally as a technical schoolteacher. The teachers lack close supervision skills to the apprentices. They are not able to prepare lesson plans and their work is not well prepared and planned. They don't know what they will teach their apprentices next day especially in practicals. They are not punctual to their duties especially in the afternoon for theory lessons. Regularly they are out of school after they have shown off in the morning.

[78]Bro Umberto. Interview: St. John Bosco: Lira, July, 1999

5.2.4 Lack of guidance and counselling services

In the school, there is no career guidance and counselling services and follow-up programmes. Majority of the apprentices have no professional background or knowledge when they join the school. They need support in the introduction to their trades through career guidance and counselling. In the school there is no teacher prepared as a counsellor to give career counselling and guidance and the apprentices too never had any experience of guidance in their education background. In this way, the apprentices grow in their trades without proper orientation and direction.

5.2.5 Limitations of the subjects offered

All the subjects offered in the technical schools are employment and exam oriented. They don't prepare an individual to a mature growth. The apprentices are taught how to make or to produce products and they are not taught or helped to discover who they are and their potentiality. In the school curriculum there is no subjects as desirable behaviour in the society, how to treat senior people, how to run a workshop and how to behave in different situations. In other words the school curriculum is weak on teaching ethics of the society and how to survive.

5.2.6 Low education level and poor performance of the apprentices

Majority of the apprentices are primary and secondary school dropouts and their primary certificate grades are very low. They join technical school as an escape from the main stream of academic studies, though there are few of them with good primary grades. Academic incapability of majority of the apprentices disorients both the teachers and the students themselves to concentrate on academic subjects, which can help them to grow. There is a good workshop attendance is the morning hours because of workshop exercises in comparison to afternoon where there are academic subjects like science and mathematics. A good number of the apprentices do not attend afternoon classes in the average per week. The reason behind this is that, the majority cannot cope with the subjects and as a result they prefer not to report back to school in the afternoon. The official documents of the school also confirm that a good number of the students fail their final government exams. There is an average of 33 per cent only of the students who do well in their examination every year.

5.3 Possible solutions to the observed problems

To a good number of the problems outlined above, the government has a big role to play in addressing them in order for technical schools to be effective in the country for national and human development.

5.3.1 Revisitation of the school/ training Aims and objectives

Aims and objectives must be considered within a carefully structured set of overall aims of education. The objectives, so formulated, should constitute a link between the set intention and the reality expressed for the students to achieve. Schools should decide what their educational goals are, and to select or develop materials, designed to achieve the goals. Materials designed with a cognitive emphasis are more apt to facilitate achievement of cognitive goals. Materials designed with a process of integration, may begin with the consideration of the aims and objects.

In practical terms, it would require teachers from all the disciplines concerned in an institution to consider together what they wish to achieve. The teacher should aim at giving the students the ability to identify practical problems, which can be overcome by the use of material resources, and to develop the cognitive and manipulative skills necessary to effect solutions. The objectives would be:

- Providing the necessary experiences for enriching the students' growth and development, and encouraging them to be creative and imaginative;
- Developing skills that would allow students to translate ideas into practical realities;
- Enabling students to identify their own problems;
- Working out appropriate solutions;
- Implementing practical results;
- Assisting students to develop an awareness of the interrelation ship of their subjects with other disciplines in the school curriculum.

5.3.2 Promotion and introduction of production units in schools

Many technical institutions in the country lack basic facilities, equipments and training materials. This condition limits the technical education curriculum to produce well-prepared and mature craftsmen or to implement its goals and objectives as expected. In an attempt to realistically expose the apprentices or to prepare them to the expectation of the world of work and also to defray the current costs of maintaining

schools, the government should help and encourage institutions or organise them in a way that they establish their own production units related to the institutional courses offered. The major objectives for the establishment of these units will be:

i) To enable the institutes to generate revenue for financial self-reliance and in meeting some essential training needs e.g. materials.

ii) To act as a base for trainees to acquire an insight into the processes of material conversion and mass production of marketable goals.

To the fact that almost all the books used in the technical institutions are written and published out side the country, the government should encourage local scholars and publishers to write and publish technical education books according to the local needs as the government has done with other levels of education.

5.3.3 preparation and provision of technical education staff

In connection to the problem of lack of training materials, the government should also address the shortage of technical education teachers' problem. The country has only one technical education teachers' training college. To enhance the achievement of the objectives of technical education, the government should put its priority to the recruitment and preparation of an adequate number of well qualified and competent teachers, administrators and guidance staff and to the provision of the necessary training and other facilities to enable them to function effectively in their profession. The government can do this by improving teachers' colleges and recruit highly qualified technicians with good will to teach in technical schools to these Colleges. The schools have also a role in addressing this problem; the schools should sponsor their experienced but unqualified teachers for further studies through seminars and other short courses.

5.3.4 Integration of the subjects

In response to the fifth problem which has become so traditional that over the years, the educational system has become so examination ridden that the entire teaching and learning is geared to passing the examination and getting good marks for qualification. In the process, many other aspects of curriculum, such as development of human being, morals and ethical values, sound physical health, practical skills, business managerial skills, participation in practical and social activities are neglected, as no

weightage is given to these in the evaluation of the students' achievements. The subjects which are not examinable get little attention from teachers and students. The government should step in by reforming the examination system, and giving due weightage to continuous comprehensive evaluation of students while they are in the schools. Evaluation should be both formative and summative and should serve the purpose of improving teaching and learning to be interesting.

5.3.5 The role of primary education in the promotion of technical education

In connection to problem number six, the government should reform primary education curriculum so that it should accommodate technical education subjects. This would implant in the youth an interest in doing practical courses and also act as a base for those who would join technical education institutions in their near future. The government needs also to promote intensively technical education at all levels of education in order to attract the youth to take up or choose technical education courses. The government can do this by upgrading technical education up to university level. The best students in Ugandan primary and secondary schools do not often select, as a first choice, to enrol in the technical education institutions. This is mainly because these institutions do not provide clean paths for advancing oneself either professional or academically. Sensing that the majority of them will be able to achieve the professional status that degree confers within their own country; the bright opt for liberal and scientific academic programmes that universities offer. The provision of technical education degrees in Ugandan universities will attract a higher quality entrance in technical education both directly into the university and through credit transfers from polytechnics, technical institutes and teacher training colleges. The promotion/upgrading of technical education to university level will also enhance preparation of personnel, which can be involved in promotion of technical education through research, managerial skills, their contribution to curriculum development and publications of their work in this field of study.

5.4 Overall problems and conclusion

Apart from the main problems noted in the study, together with the possible solutions to them, comment on the emoluments and condition of service for teachers, the teaching and learning process: methods and materials, is felt to be necessary.

5.4.1 Emoluments and condition of service

Skilled workers and technical education teachers in Uganda are under paid and their working conditions are miserable. This can be one of the factors that might have implanted in peoples' minds a negative attitudes towards technical education, to take it as "education for less academic people"[79] as Sifuna puts it, and a demotivating factor for teachers in their profession not to feel well identified with their profession. Schools and the government should promote the welfare of skilled workers and teachers by offering them emoluments and conditions of service favourably in comparison with those enjoyed by persons with similar qualifications and experience in other occupational fields. In particular, promotions, salaries, scholarships, and pension and salary scales for technical education personnel should take into account any relevant experience acquired in employment. It is sad to note that all technical qualified personnel in the country are classified as supporting staff[80] by the ministry of labour in the country as in any other African country.

5.4.2 Integration of workshop practice and theory

It is the duty of every technical institution and the government to ensure that, the methodology of learning should assume equal importance in the teaching and learning process with the subject matter itself. All aspects of technical education should be oriented to the needs of the learner and directed to motivating them, and methods and materials developed accordingly. Theory and practice should form an integrated whole: what is learned in the workshop or class should be directly related to the mathematical and scientific foundations of the particular operation, and conversely, technical theory, as well as the mathematics and science to sustaining it, should be illustrated through their practical applications.

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[79]D.N Sifuna. Vocational, education in schools. A historical survey of Kenya and Tanzania (Nairobi: Eastern African Literature Bureau, 1976),144

[80]The labour officer. Interview. 18 July 1999, Lira District Labour office

5.5 Conclusion

There are many hindrances to the contribution of Technical education to either human or skill development of the individuals. In this chapter, some problems observed in the case study are outlined. Several problems are identified as contributors to the current state of Technical education in the country and a hindrance to its contribution to human development. The chapter argues the government and interested parties to take initiatives in the reformation of technical education, before the problems go out of hand. It has also put forward the possible solutions to the existing problems.

The next chapter presents a project proposal as an overall solution to the present state of Technical education in the country without an attempt of fighting against the existing structure.

CHAPTER VI

PROJECT PROPOSAL

6.1 Project Name: UGANDA ENTREPRENEURSHIP TRAINING CENTRE

6.2 Project Overview

This chapter is the project proposal of an entrepreneurship Training Centre whose aim is to give refresher courses to the skilled workers, impart in them useful skills for personal growth and, to set an example to the government and other Non Governmental Organisations on how Technical education can be used to form/prepare responsible and mature citizens/craftsmen. It is intended to promote technical education and to give support to existing manpower. It is a project that has highly considered all the elements mentioned and discussed in the previous chapter.

6.2.1 Background of the Project

Uganda Entrepreneurship Centre will be a project with an existing structure situated in Lira District. It will establish units or sections to work, support and to empower skilled workers in their professions. It will also work in collaboration with the existing technical colleges in the district and in the country. The centre intends to consolidate its programme in St. John Bosco Technical Training Centre as a pilot centre before its full development.

The project in collaboration with the existing technical centres, will aim at improving the training of the apprentices to the present needs, motivate them and impart in them the knowledge which can help them to be creative in the professions. The project will also help the skilled workers to be job creators and be equipped in business and entrepreneurship management.

The centre in collaboration with NGOs and other interested parties in the development of Technical education will advocate and enhance the improvement of technical education in the country.

6.2.2 Statement of the problem

It is increasingly clear to the students and the general population that self-employment is the only way by which the vast majority of young people will be able to find jobs and grow to contribute to the development of the country.

The days that Technical education finalists had guaranteed government and private companies jobs, are over and their privileged position is undermined by the "There is no work" reality that awaits them on graduation.

Last year alone there were over 10,000 Ugandans that earned their technical education qualifications and this year they will be more. Each year they join the thousands of finalists who are still tarmacing and those employed just get exploited and earn very low wages/salaries.

However, this situation shows the failure of technical education to contribute to a total human growth. It is wasteful of society of these young men that have passed through different levels of education, long and necessitated parental economic sacrifice, and are not immediately utilised to develop the country and in fact continue to be non-productive consumers. Most of them are talented, bright, hungry and willing but they do not have the experience, the knowledge on how to use their skills and knowledge or capital to effectively create their own jobs. Their training as seen in the study does not prepare them for the real life.

There is urgent need of a centre in Uganda today to show the youth the way. The centre is needed to adopt the technical graduates, help them start up small enterprises and supporting them through any or all of the following, depending on the need and availability of the resources.

- Providing skill training.
- Requirements and procedures for business operation.
- Giving financial backings on a basis of trust and possibly stake holding.
- Acting as sounding board for dealing with initial problems and strategies for business survival.

If nothing is done at this moment, our education system will continue to create job seekers; the employment problems and exploitation of the skilled manpower will continue to create more problems in the society. It is better to help the skilled youth to tap their intellect, shape their attitudes and strategies and channel their energies into productive endeavours than to keep them as children forever.

6.2.3 Rationale of the project

During the study, it was observed and found out that the training provided in junior technical schools is skill and knowledge oriented. It is also imbalanced on the aspect of preparing the apprentices for the world of work or personal growth to take up responsibilities. The apprentices complete their training without the knowledge of how to start and run a business, how to keep financial business records and there is no school follow up of their performance after the training. The project is perceived to complement technical training offered in various schools and parts of the country.

6.2.4 Project Goal

To complement technical training offered to the youth in the country and to offer them a balanced education for person growth/development, which will enable them to discover their potentiality and come to appreciate their training.

6.2.5 Objectives

The philosophical approach of the project would be based on:

1. To enhance reformation of technical education system.
2. To promote self-employment and technical education.
3. To empower skilled workers and to bring them together to realise their potentiality and to fight against labour exploitation.

6.2.6 Basic Assumptions

The basic assumptions of the project are:

- There are some NGOs and other groups, which are interested in improving skilled work, and the promotion of technical training in the country and these may contribute to the success of the project.
- The technical schools in the country are well organised. They are grouped into regional associations and these associations might act as motivators or vehicles to reach out to others schools in the country for the success of the project.
- The project will give support to the stranded skilled workers and promote their welfare.
- The existing institutes and technical graduates are likely to support the project.

6.3 Project's Propensity to Succeed (SWOT ANALYSIS)

6.3.1 Strengths

The strength of the project to succeed includes:

- The private owned Technical schools in the country are well organised under different regional associations and these will be the entry points to implement the project or to sell its idea.
- There is a good number of technical institutes and a number of graduates every year in the country that will need the services of the centre.
- There are already existing structures and the project will operate within the existing infrastructure for a take off.
- There are good communication facilities in the country and these will favour easy communication and contacts with the schools and the apprentices for the success of the project.

6.3.2 Weaknesses

The weaknesses, which might lead to the failure of the project, include:

- Poor and low local financial contribution to the running of the project.
- Shortage of committed and well prepared personnel in the running of the project.
- High dependence on the donations and influence of the project donors.

6.3.3 Opportunities

The foreseen opportunities for the success of the project include:

- The availability of institutions; schools, banks, etc.
- Net working with other institutions and NGOs interested in promotion of technical education to contribute to human and national development.
- Existence of regional technical education associations.

6.3.4 Threats

The threats to the success of the project are:

- Political instability and rebel activities in some parts of the region.

- Rapid spread of HIV/AIDS and its high claim of lives among the productive age in the country.

6.3.5 Risks

The risks to the smooth running of the project are:

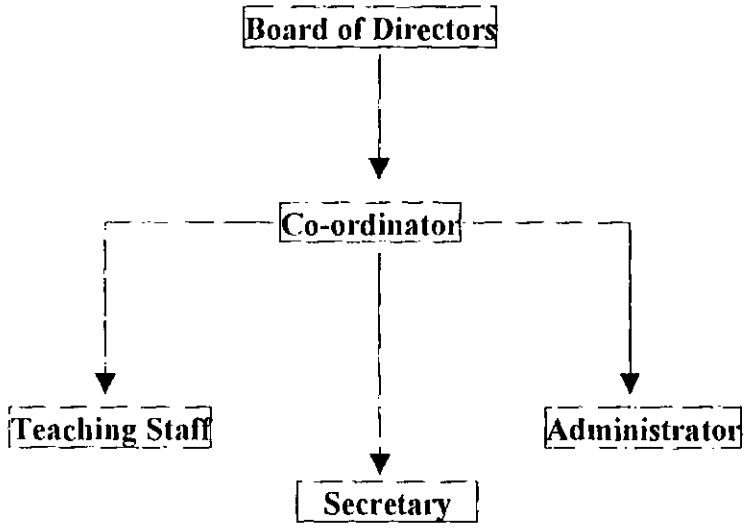
- It may create dependence among the skilled workers.
- The loans might not be refunded due to either natural calamities or attitudes of taking things for granted.

6.4 Success Criteria

The main need of the project is to complement technical training and to help skilled trained workers to be self-critical and to develop the individual's emotional, creative, initiative, adaptive, analytic and intellectual capacities as well as character to meet his/her daily needs. The success criteria of the project will be measured depending on the achievement of its objectives within a period of five years when:

- The centre will be able to receive applications and cater for apprentices from all parts of the country.
- The first two groups to be trained at the centre will be able to open up, run small businesses, and approve the effectiveness of the training offered.
- The syllabus will be developed and consistence.
- The centre will be on the truck to be self-reliant.

6.5 Project Managerial Structure and roles



The centre will be run using one general common and simple principle. That is, there will be a teaching staff of full time teachers and part time teachers. The teachers will report to the senior staff member who will be an administrator of the project then to the co-ordinator who will be the over all boss of the centre. The teaching staff and the co-ordinator will be helped by the members of the community in the area who will be entrusted with various responsibilities as regard to the running and the development of the centre and together they will form a board of governors. The board will make policies and ensures that they are put into effect. It will also co-ordinate in general the running of the centre and make reports to the sponsors and interested parties to the success of the project.

The board will meet twice in a term of three months though, sometimes extra ordinary meetings will be held.

6.5.1 Description of Functions

6.5.1.1 Board of Governors

The board will be made up of individuals with different experiences and interests in the development of technical education for national development. It will be made up of religious leaders, heads of private owned institutions, business and other specialised people in education like teachers and others. They will be eight in number and they will be meeting every month at the beginning of the project. After a year, they

will meet thrice in a year to discuss the welfare of the centre and to evaluate the activities of the centre. Among other duties, the board will carry out the following;

1) To take ownership of issues under jurisdiction.
2) To make the budget, policies, mission, philosophy and planning of the school.
3) To review and evaluate annually the goals and activities of the school.
4) To assess the progress of the school periodically.
5) To hold meetings to find solutions and resolutions on the matters arising in the school.
6) To organise fundraising activities and to make reports to the sponsors.

6.5.1.2 Co-ordinator

- He is the overall manager of the centre, personnel, records and staff development.
- He is responsible for meetings, school governance and school facilities and the apprentices.
- He is the chief planner of the centre, staff and apprentices.
- He supervises staff and inspects all activities of the centre, in and outside.
- He prepares and allocates teaching timetable.
- He is the in-charge of admission of the apprentices to the school.
- He carries out research, monitor and evaluate the school activities.
- He presents inspection report to the Board of governors.

6.5.1.3 Administrator

- He liaise with the teachers, apprentices and the public for the co-ordinator.
- He drafts timetables, duty rota and examination timetables.
- He organises examinations, sports activities and other functions.
- He is responsible for staff and school co-curricular programmes.
- He organises centre assembles and seminars.
- He controls stock and equipment e.g drawing papers, chalks, centre tools and materials.
- He manages the finances of the centre.
- He is responsible for materials and supplies
- He is the in-charge of exercise books, registers, and lesson plans.
- He chairs sub committee meetings.

- He co-ordinates activities of class teachers and section heads.
- He checks schemes of work and lesson plans.
- To give weekly report of the centre activities and progress to the co-ordinator.

6.5.1.4 The teaching staff

This will be composed of all the teachers and individuals whose function will be to execute the curriculum of the centre effectively. Together with the administration staff, they will form a staff committee and they will meet every Fridays during training to evaluate the progress and performance of the trainees. The duties of the teachers among others will include;

1) To prepare lessons and schemes of work.
2) To give lessons, practically and theoretically to the apprentices.
3) To give report of class's progress to the administrator.
4) To supervise activities/work of the apprentices.
5) To reinforce school rules and regulations.
6) To help in the development of the curriculum according to the local needs.

6.5.1.5 The Secretary

- To keep records and minutes of meetings.
- To prepare in collaboration with the other administrators the agenda for meetings.
- To keep in touch with interested groups, donors and former students of the centre.
- To collaborate with the administrator in all affairs of the centre.

6.5.2 Work-Break down Structure

Objectives	Activities	Work package	Estimated time
To empower skilled workers and to bring them together	Consultations	• Visits to schools	1 month
		• Zone meetings	1 month
		• Discussions in schools	1 month
	Seminars	• Invitation letters	2 weeks
		• Venue hiring	3 weeks
		• Transportation of participants	36 days
	Publications	• Researching	5 weeks
		• Newsletter publication	9 weeks
To promote self-employment	Workshop and entrepreneurship training	• Class/workshop	36 months
		• Education tours	6 days
		• Admission	3 weeks
	Loan provision	• Advisory	1 year
		• Financing	18 months
		• Follow up programme	3 months
	Marketing	• Buying and selling of products made	18 months
		• Show room operation	22 months
		• Advertisement	12 days
To enhance reformation of technical education system	Curriculum development	• Contacts with curriculum development centre	12 days
		• Contacts with the minister of Ed. and Regional officers	6 days
	Net working with institutions, NGOs, religious organisations	• Organising meetings with school heads	2 days
		• Exchange of information with other institutions.	15 days
	To support inter institution sub curriculum activities at regional level	• To share facilities	1 month
		• Financing sports	3 months

6.6 PROJECT BUDGET:

Northern Uganda Entrepreneurship Training Centre (NUETRACE)

For the period 2002 – 2005 at the cost of Ugandan Shillings 340,474,916

Note: US$=1,800 Ugandan Shilling

ITEM	YEAR 1	YEAR 2	YEAR 3	TOTALS
Training equipment				
• Combiner machine	18,307,692			18,307,692
• Welding machine	1,080,000			1,080,000
• 5 tool kit set for mechanics	9,845,000			9,845,000
• 10 carpentry tool set	3,400,000			3,400,000
• Timber	8,341,015	8,341,015	8,341,015	25,023,045
• Metal bars	6,000,000	6,600,000	6,600,000	19,200,000
• A 30 people Dormitory	5,400,000			5,400,000
• Dormitory furniture	1,846,153			1,846,153
• Library books	468,000			468,000
Office equipments				
• 2 computers @ 1,520,000	3,040,000			3,040,000
• Stationnaires	1,386,000	1,386,000	1,386,000	4,158,000
• Photocopier	2,307,692			2,307,692
• Furniture	360,165			360,165
• Telephone	1,620,000	1,620,000	1,620,000	4,860,000
• Electricity	3,323,076	3,323,076	3,323,076	9,969,228
Salaries/wages				
• 8 personnel @ 240,000 each per month	22,560,000	22,560,000	22,560,000	67,680,000
• Capital for loans	36,000,000			36,000,000
Transport				
• Pick up - vehicle	18,461,153			18,461,153
• Motor cycle	3,420,000			3,420,000
• Fuel & maintenance	4,153,846	4,153,846	4,153,846	12,461,538
Local contribution				
• Land	3,681,538			3,681,538
• A three class room Block rent	864,000	864,000	864,000	2,592,000
• Fees	1,200,000	3,600,000	3,600,000	8,400,000
• Sales	6,820,788	13,641,576	13,641,576	34,103,940
SUBTOTAL	163,886,118	66,089,513	66,089,513	296,065,144
Contingency 15% of subtotal	24,582,918	9,913,427	9,913,427	44,409,772
GRAND TOTAL	188,469,036	76,002,940	76,002,940	340,474,916

- **Total Local contribution: 48,777,478**
- **Total Donors' contribution: 291,697,438**

GENERAL CONCLUSION

Giroux points out that education loses meaning if it is not understood, as all practices are, as being subject to limitation:

> "If education could do everything there would be no reason to speak about its limitations. If education could not do any-thing, there would still be no reason to talk about its limitations".[81]

May be this study has not led into the normally well-lit place of theory. However, may be, through it, it has been possible in some way, to faithfully describe the nature and appearance of a small corner of some problems associated with educating the youth for their future membership to the society and their active participation in its maintenance or development[82]and their own growth through technical education within the Ugandan context. It must be pointed out here that the aim here has not been to degrade the technical education offered in the country.

All that the study has attempted to do is to look for ways, which can enhance the contribution of technical education to human development apart from its skill and knowledge orientation. The study has looked at the ways at which technical training is offered to the youth in the country and has highlighted shortcomings which might be taken for granted and yet at the same time pose a great threat to the economic and technological advancement of the country.

Looking at the historical development of technical education, its objectives and the training programme for the youth in the school, the study proves that the development, objectives and programmes ignore the human growth aspect. They just occupational/manpower oriented. The students completing technical courses are ill equipped/prepared for self-employment, and self- determination as mature persons. They lack knowledge of how resources can be obtained for a private enterprise and how to utilise them optimally through knowledge of costs of raw materials and other inputs, organisation of a line of production, maintenance of accounts and methods of marketing the products and services.

The study in conclusion recommends the integration of technical and business education for preparation of skilled personnel, creative and capable of earning a living on their own. However, no matter how the problems observed rooted in the education

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[81] Cecilia Namulondo Nganda Primary education and social integration: a study of ethnic stereotype in the Ugandan basic text books for primary school (Bayreuth: bayreuth African Studies Breitinger, 1996), 155

[82] Julius Nyerere, op. Cit, 1

system they are, there is a hope that in some way, the observations, findings and proposals put forward in this study will contribute to a reformation of technical education in the country and promote skilled work for human development.

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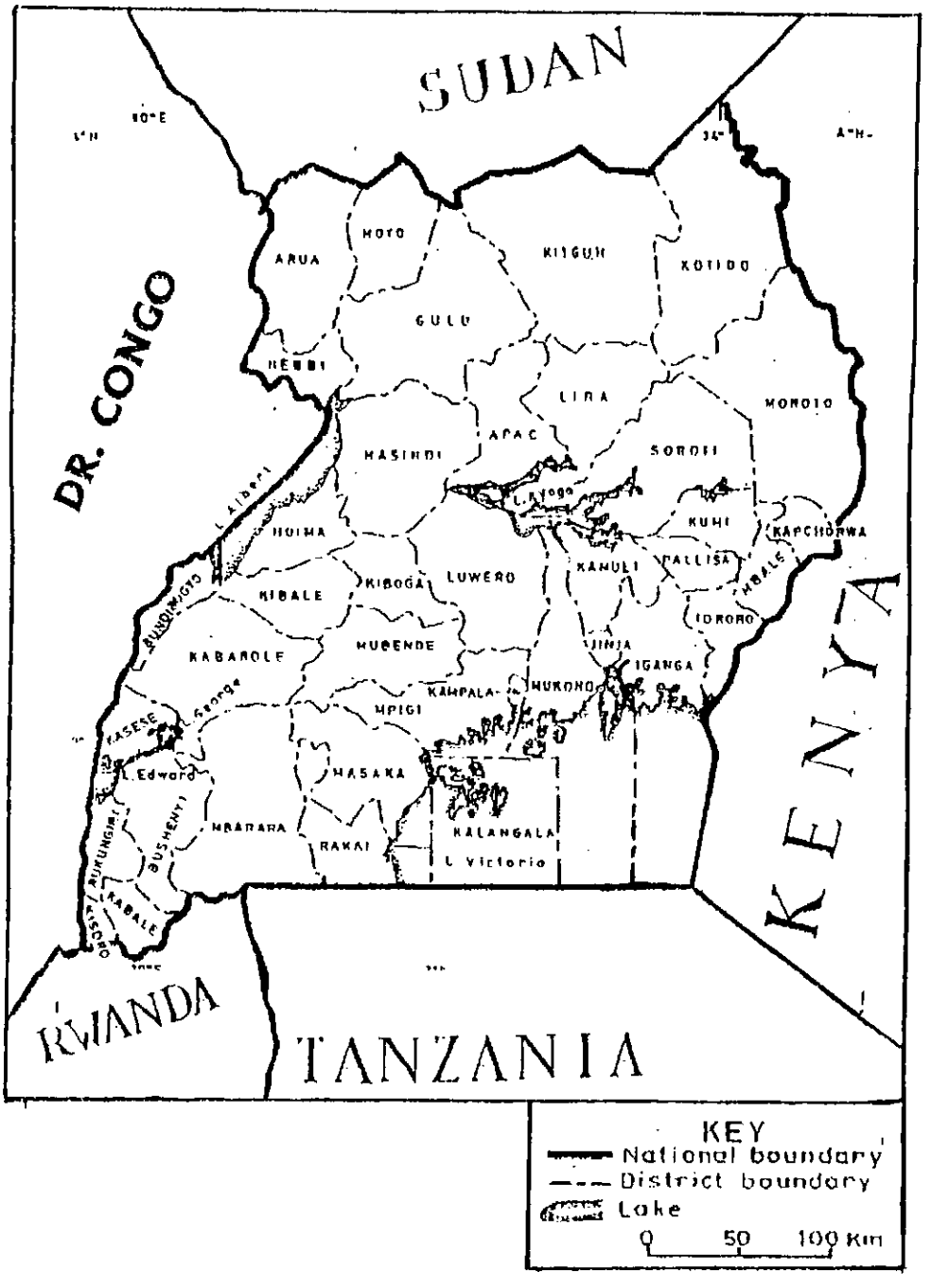
APPENDIX I:

MAP OF UGANDA SHOWING THE DISTRICTS AND HER NEIGHBOURING COUNTRIES



Source: Uganda Districts Information Handbook. Fountain publishers Ltd, Kampala, 1992

APPENDIX II:

DISTRICTS AND NUMBER OF REGISTERED TECHNICAL INSTITUTES, PRIMARY AND SECONDARY SCHOOLS AS PER 1992 STATISTICS/SURVEY IN UGANDA

District	Number of Technical Institutes	Number of Primary schools	Number of Secondary Schools
Apac	3	258	15
Arua	2	309	20
Bundibugyo	-	66	12
Bushenyi	4	522	43
Gulu	1	185	15
Hoima	-	272	11
Iganga	2	384	12
Jinja	-	103	8
Kabale	3	351	25
Kabarole	-	368	26
Kalangala	1	17	1
Kampala	1	108	20
Kamuli	1	202	8
Kapchorwa	1	63	5
Kasese	1	182	8
Kibale*	-	-	-
Kiboga*	-	-	-
Kisoro*	-	-	-
Kitgum	9	284	-
Kotido	-	87	3
Kumi	1	127	3
Lira	3	267	23
Luwero	-	260	11
Masaka	2	304	12
Masindi	1	168	6
Mbale	1	451	25

Mbarara	5	566	36
Moroto	-	59	3
Moyo	1	87	4
Mpigi	2	453	25
Mubende	1	347	11
Mukono	-	452	23
Nebbi	1	189	6
Pallisa*	-	-	-
Rakai	1	206	11
Rukungiri	2	317	27
Soroti	3	35	13
Tororo	6	496	38
TOTAL	**59**	**8545**	**509**

Source: Uganda Districts Information Handbook. Fountain publishers Ltd, Kampala, 1992

* Note:

- The districts of Kibale, Kiboga, Kisoro, and Pallisa share the school services with the old districts to which they belonged before their creation immediately after the survey. And the districts are Hoima, Mubende, Kabale, and Tororo respectively.
- The list include only Government controlled/run/owned schools.

APPENDIX III:

IN-DEPTH INTERVIEW GUIDE

a) for the apprentices

Personal information

Name:

Course:

Year:

1. which subjects were you taught at primary school level that made you attracted or interested to technical training?
2. which subjects do you like most in the school and why?
3. what do you see/experience as a hindrance to your proper training here in the school?
4. what are your future plans after the training here?

b) for the teachers

Personal Information

Name:

Profession:

Qualification:

Place of work:

Salary :

Work and teaching experience:

1. what are the problems that you face in your profession as a teacher?
2. which subjects do most of the students like most?
3. what are the subjects in the course you teach?
4. are the contents of the subjects relevant to the future needs of the apprentices for self-employment?
5. in what ways do the subjects/course help the students to be self-reliant?

6. what do you think could be the best way to help the students to be trained for self reliance: economically, socially and politically?
7. how do you assess the students' performance and what importance do you accord to the sub curriculum subjects?
8. what does the school management do to the students who look or turn disoriented/disinterested in their training process?
9. what is the general attitude of the students and the parents towards technical education?
10. what are some of the problems do the students face when they are out of the school?
11. Does the training help the students to develop as integral persons or not. Does it provide formation or does it only provide information and skills?
12. what are the problems of the school?

APPENDIX IV

OBSERVATION GUIDE

Observation guide is a key tool for primary data collection. It involves, looking, hearing and recalling what others say. The guide was prepared in order to stick to what should be observed and collect about and to save time.

Areas to observe

1. Facilities used for training.
2. Class attendance and performance of the students.
3. Sources of the facilities used.
4. The use of the facilities available.
5. Interconnectedness of the theory and workshop practice.
6. Relevance of the training to the apprentices human development.
7. Teaching techniques and methods.
8. Remarks of the students about the training.
9. The students' attitudes towards the training.
10. Practicality of the school obejectives
11. The school efforts to improve or promote technical training.
12. The role of the teachers in promoting technical training and motivating the students.

APPENDIX V:
CARPENTRY AND JOINERY SYLLABUS

Syllabus of CARPENTRY & JOINERY TRAINING / Module 1

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
1	1 Introduction Classroom, school area workshop, machines and equipment 2 Issue and demonstration of hand tools	28	Introduction on classification of hand tool Demonstrate and explain tool of 1 Marking and setting 2 Shaving tool 3 Cutting tools	6	1 Introduction to drawing equipment 2 Printing letters 3 Types of lines used in drawing	4	Introduction, trade related mathematics. Definition & basic arithmetic	2
2	1 Demonstration of planning face side and face edge 2 Gauging and planning to size 3 Demonstration of lapping and cross cutting 4 Safety precautions to be taken when using tools	28	Demonstrate to explain tool of 1 Paring tools 2 Impelling tools 3 Boring tools 4 Abrasive tools	6	Introduction to using scale rule e.g. 1:1 mm, 1:2 mm, 1:5 mm etc.	4	Defined and basic arithmetic Trade related maths	2
3	1 Demonstration of construction of half lapped and cross halving joints 2 Explain the sequence of operation - marking, cutting and fitting of the joints	28	Demonstrate and explain tool of 1 Fixing tools 2 Miscellaneous tool	6	1 Construction of perpendicular lines, angles and bisection	4	Trade related mathematics	2
4	1 Construction of a) haunced mortise and tenon joint b) Tee bridle joint 2 Explain the sequence of operation involved in the making of the joints	28	Classification and demonstration of joints 1 Lengthening joints 2 Widening 3 Carcasing 4 Framing joint	6	Construction of plane figures to scale e.g. square rectangles rhombus, para elogram, etc	4	Costing and setting related mathematics	2
5	1 Construction of dovetail joints a) Dovetail halving joint b) Cranked dovetail joint 2 Explain the sequence of operation involved in the preparation of templates	28	1 Growth and structure of wood 2 Conversion of timber and methods applied 3 Seasoning of timber and show methods and precautions during seasoning	6	Introduction to orthographic projection i.e., front elevation plan side elevation back elevation	4	Metric system SI - Units Test.	2
6	1 Construction of dovetail joints continued a) Lapped dovetail b) Secret dovetail 2 Explanation of the sequence of operation involved in the preparation of templates	24	1 Defects of timber 2 Prevention and eradication of defects 3 Wood preservatives - types and methods of application 4 Differences between hard & soft wood.	6	Introduction to isometric projection e.g., blocks, shaped blocks to given scale	4	Percentages, rates and proportions tools	2
7	1 Construction of housing joints a) through housing joint b) stopped housing joint c) single and double dovetail housing joints	28	IRONMONGERY Classification and demonstration of iron mongery: a) Fixing devices which allow movement b) fixing devices which provide security c) Fixing device which make permanent fixing	6	Introduction to oblique projection (45°)	4	Triangles and regular polygons.	2
8	Mode' Test Preparation of drawing comprising of some of the above joints Trainees to interpret drawing to identify the joint, follow sequence of operation from the above exercise	28	ADHESIVES a Types of adhesives b Characteristics of adhesives c Use and application of adhesives	6	Revision test and correction of the above topics	4	Triangles and regular polygons	2
9	Construction of door frames - 1 Single door frame 2 Door frame with vent 3 Rebating & moulding 4 Joints used scribing & mitres	28	Construction work manufactured boarding - plywood, blackboard laminated board, chipboard card board double faced boards, snft boards etc	6	SOLID DOOR FRAME Draw Frame to scale, S/Elevation Plan, sections	4	Find surface areas for roofs with polygon shape	2
10	Construction of Window frames - 1 Joints to be used 2 Frames with vents 3 Frames single or double 4 Frames with mullion 5 Weathering	24	DOOR FRAMES - Classification of door frames Methods of joining - Single, double, combined door frame frame with fanlight louse glazed gauze wire fan light	6	Door frame with vents Detail of elevation plan, section to scale	4	Polygon areas continued	2
12	Battened doors - 1 Setting and Marking 2 Grooving & V joints 3 Smoothening & Assembling 4 Fishing & checking diagonals	28	WINDOW FRAMES - Classification of window frames - Single and double with mullion and transome - Design of sections methods of joining	6	Construction of circle - Tangent, normals, Inscribe, circum	4	Fractions continued	2
13	Framed battened door 1 Cutting list 2 Preparation of members 3 Construct joints 4 Smoothening & fitting 5 Apply glue Construction of Panel or door wall 1 Flat Panelled 2 Flush beaded 3 Raised Panelled	28	DOORS Introduction to types of doors a Standard sizes of doors by building regulations b Battened & edged door c. Battened braced & ledged d Framed ledged braced & battened Framed ledged braced & battened door - design, standard sizes and construction - joints used, treatment to battens for shrinkage & finishing - methods of joining	6	Ledged braced door A Elevation B Elevation sections to scale Framed ledged & battened 1 A Elevation 2 B Elevation 3 C Section & Horizontal to scale	4 4	Fractions Class work and home work Calculate surface areas for rectangular walls, materials to be used e.g., paint	2
14	Louved doors 1 Joints used 2 Setting housing at 45° 3 Fixing Louvres 4 Chamfering edge	28	GLAZED DOORS - Construction of glazed doors - Full glazed door - Half glazed door	6	Sloping using different methods to scale	4	Areas continued Class work Home work	2

Syllabus of CARPENTRY & JOINERY TRAINING /Module 1

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
15	Construction of garage door 1 Methods of fixing battens 2 Methods of braces and ledgers	28	Glazed doors and joints and methods of glazing	6	Glazed door - Draw the front elevations and sections of fully and half glazed door to scale - sectional details to scale	4	Test Exercises	2
16	SHARPENING TOOLS 1 Safety rules regarding the use of hand tools 2 Necessary requirements for sharpening planes and chisels 3 Angles necessary for grinding and sharpening tools 4 Demonstrate the skill in grinding and sharpening	28	Details of joints used - details of fixing wooden and glass panels provision of shock absorbing material to prevent glass breakage.	6	Glazed doors etc - elevation, and sections on a given scale of fully and half glazed door. - sectional details to a given scale.	4	- Trade related maths - Cost estimations - Bill of quantities	2
17	CARCASE CONSTRUCTION 1 Construction of a meat safe cupboard with use of common dovetail and through housing joint	28	PANELLED DOORS Introduction to types of Panelled doors 1 Single Panelled door 2 Multi Panelled doors	6	Single Panelled door - To draw front, vertical and horizontal - Sections to scale - Details of sectional members to scale - Indication of mouldings	4	Cost estimations e.g., for materials, labour, profit etc	2
18	Construction of simple standard forms provisions of finishing e.g. sand papering and varnishing	28	TYPES OF WOODEN PANELS 1 Flat panel 2 Flush and beaded panel 3 Raised panel 4 Rebated panel	6	Multi Panelled doors 2, 4, 6, Panelled - front, vertical & horizontal sections to scale details of sectional members to scale	4	- Cost estimates e.g., for materials, labour, profit etc	2
19	Construction of simple standard forms - Provision of finishing e.g., sand papering and varnishing	24	TYPES OF MOULDINGS APPLIED TO PANELS 1 Planted mouldings 2 Stuck mouldings 3 Bollection mouldings	6	Multi Panelled doors 2, 4, 6, Panelled - front, vertical & horizontal sections to scale - details of sectional members to scale	4	- Cost estimates e.g., for materials, labour, profit etc.	2
20	Construction of chairs with wooden seats Provision of finishing e.g., sand papering and varnishing	28	FLUSH DOORS TYPES OF FLUSH DOORS 1 Skeleton core 2 Lattice core 3 Laminated core 4 Flaxboard core	6	Multi Panelled doors 2, 4, 6, Panelled - front, vertical & horizontal sections to scale details of sectional members to scale	4	- Cost estimates e.g for materials, labour, profit etc.	2
21	Construction of chairs with wooden seats - Provision of finishing e.g., sand papering and varnishing	28	5 Flush door with wider panel - Types of materials used - application of doors - sketches of details of construction - adhesives used - treatment to edges - provision for locks	6	FLUSH DOORS Draw front elevation and sections to scale - draw details showing the internal construction of each type	4	BILLS OF QUANTITIES	2
22	Construction of sofa set provision of finishing e.g. sand papering and varnishing	24	MANUFACTURED BOARDS - Types of manufactured boards 1 Plywood 2 Block board 3. Batten board 4 Laminated boards 5 Chip board 6 Soft board	6	Sketches showing the different make of manufactured boards plywood - block board batten board	4	VOLUMES	2
23	Preparation of Examination							
24	Examination and End of Module 1							

Syllabus of CARPENTRY & JOINERY TRAINING / Module 2

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
1	Construction of sofa set - provision of finishing e.g., sand papering and varnishing	28	7. CARD BOARD - materials used types of adhesives - process of manufacture - application - where to be used	6	Sketches showing the different makes of manufactured boards lamina board - chip board - soft board - card board	4	Square roots	2
2	Construction of single office desk provisions of finishing e.g sand papering and varnishing	28	WINDOW SHUTTERS - Types of shutters 1 Window casement sash 2 Pivot hung sash 3 Sliding sash 4 Fixed sash details of construction for casement sash.	6	Casement windows - Draw front elevation, venical and horizontal sections to scale Pivot hang sash - front elevation, vertical and horizontal sections to scale	4	Squares Formula (change of subject)	2
3	Construction of school desks - provisions of finishing e.g., sand papering and varnishing	28	Details of construction for pivot hang sash BUILDING MATERIALS Introduction to materials used in building construction in general: Properties of building materials e.g porosity, absorption	6	SLIDING WINDOWS - Draw front elevation, vertical and horizontal to scale	4	Direct proposition Ratios	2
4	Construction of simple book shelves provisions of finishing e.g., sand papering and varnishing	28	INTRODUCTION Definition of force - the use of force in service work application of force A Parallelogram and Triangle of forces B Graphical representation of force resultant C Equilibrium of forces SIMPLE MACHINES e.g. Crow bar, wheel barrow, shade etc The use of simple machines and terms involved to obtain a Effort b Velocity ratio c Mechanical advantage d Efficiency - simple calculations	6	- Flush doors - glazed doors - window shutters etc	4	Inverse proportion Cosine, Sine Tangent	2

Syllabus of CARPENTRY & JOINERY TRAINING / Module 2

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
5	Construction of armed office chair - provisions of finishing e g sand papering and varnishing	28	ROOF CONSTRUCTION Types of roofs - single roofs, flat, couple, close couple collar, lean to double lean to details - Sizes of members joints used pitch recommended eaves finishing	6	Draw front elevation, details of joints Sections to a given span on scale of single roofs	4	Compound proportions Simple interest	2
6	Construction of armed office chair - provisions of finishing e g sand papering and varnishing	28	Double roof T D A - Latticed roof truss laminated roof truss	6	Draw front elevation, details of joints sections to a given span on scale of double roofs	4	Compound interest	2
7	Construction of a simple bed - Bed end and bed frame provisions of finishing e g sand papering and varnishing	28	FLOOR CONSTRUCTION Types of floors a Ground floors - solid ground floor Details -- spacing of joists	6	Draw front elevation details of joints Sections to a given span on scale of ground floors	4	Work	2
8	Construction of a simple bed Bed end and bed frame - provisions of finishing e g , sand	28	- method of supporting provision of ventilation - joints used to floor boards - methods of cramping floor boards	6	Draw front elevation details of joints Sections to a given span on scale of ground floors	4	Power	2
9	Construction of a simple bed Bed end and bed frame - provisions of finishing e g , sand	28	b Upper floor - single floor - bridging joists double floor - binder and bridging joists - triple or framed ground floor and bridging joists	6	Draw front elevation details of joints Sections to a given span on scale of upper floors	4	Factorization Pythagoras theorem	2
10	CONSTRUCTION OF CUPBOARDS SMALL TO LARGER SIZE - constructional joints used - fixing shelves hinging doors fixing locks to doors and drawers	28	POWER HAND TOOLS - types of power tools - functions of power hand tools safety precautions - advantages and disadvantages over hand tools and fixed machines POWER HAND DRILL and router machine - details of power hand drill - types of hand drills e g light medium and heavy duty hammer - special attachments to drilling machine	6	Draw front elevation details of joints, sections to a given scale of upper floor	4	Uniform speed	2
11	CONSTRUCTION OF BOOK SHELVES - book shelves with doors and those without doors - fixing glasses to doors provision of finishing e g sand papering and varnishing	28	POWER HAND TOOLS CONTINUED Circular saw and jig saw - functions of each - types of blades - Sanding machines - Types of sanding machines - Orbital sander - belt sander - safety precautions antages and disadvantages of each	6	Draw front elevation section and details of a book shelve with doors and without doors to a given scale	4	Thermal expansion	2
12	SITE WORK - ROOF CONSTRUCTION Demonstration of layout of roof members on ground to given span and pitch Joints applied to roof members Applying equipment to use for erecting truss Provision of members to trusses to secure roof Final finishing for eaves e g applying fascia board, water gutters etc Fixing devices and joints e g, bolts used to join roof members	24	POWER HAND TOOLS Continued - power hand planer - jay planner - details of the power hand planner - safety precautions - advantages and disadvantages - Revision of the above	6	Draw elevation and details of one of the roofs, and details to different given scales	4	Work power and efficiency	2
13	SITE WORK - ROOF CONSTRUCTION Continued Demonstration of layout of roof members on ground to given span and pitch Joints applied to roof members Applying equipment to use for erecting truss Provision of members to trusses to secure roof Final finishing for eaves e g applying fascia board, water gutters etc Fixing devices and joints e g bolts used to join roof members	28	ADVANCED DOORS Types of advanced doors 1 Fire checkon doors 2 Church doors Details, materials and purpose of construction advantages and disadvantages of each	6	Draw front elevation vertical section horizontal sections and constructional details of advanced doors e g, fire checked doors church doors to a given scale	4	Work power and efficiency	-
14	SITE WORK - ROOF CONSTRUCTION Continued Demonstration of layout of roof members on ground to given span and pitch Joints applied to roof members Applying equipment to use for erecting truss Provision of members to trusses to secure roof Final finishing for eaves e g, applying fascia board, water gutters etc Fixing devices and joints e g bolts used to join roof members	28	ADVANCED DOORS Continued 4 Sliding doors - details of the doors - materials used sizes - purpose of construction - advantages and disadvantages, safety precautions	6	Using given scales draw elevation, vertical section, horizontal section, and details of revolving doors	4	Percentage of moisture in wood	2
15	SITE WORK Partition work - construction of partition - sequence of operation - method of erection practical model of a partition	28	PARTITION CONSTRUCTION - Types of partitions - Terminology and members used sizes Stud partition Framed partition	6	Draw front elevation - vertical horizontal sections of a simple partition to a given scale - Draw sectional details to scale	4	Inclined planes without friction	2

Syllabus of CARPENTRY & JOINERY TRAINING / Module 2

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
16	SITE WORK Continued - stud partition construction sequence of operation - method of erection - members used and sizes practical model of a stud partition Framed partition - sequence of operation - method of fixing panels - erection sizes of members and materials used practical model of a framed partition	24	STUD PARTITION -Details, members used, sizes covering materials - sound proofing, treatment at openings, joints used sequence of operation - provision for fittings FRAMED PARTITION Details, members used, sizes covering materials, sound proofing, treatment at openings, joints used sequence of operation, provision for fittings	10	TO SCALE DRAW Front elevation, vertical and horizontal sections of a stud partition Draw sectional details to scale Framed partition draw front elevation, vertical and horizontal sections to a given scale - sectional details to a given scale	4	Friction Quadratic equation	2
17	SITE WORK Continued Form work - construction of form work pre cast form work for lintels - sequence of operation - practical models of precast and cast-in-situ form work for lintels	28	FORM WORK - Definition of form work - Types of form work - pre cast and cast-in-situ Materials used and sizes form work for lintels	6	Draw the front elevation vertical section and plan of form work for lintels to a given scale sectional details to scale	4	Quadratic equations	–
18	SITE WORK Continued FORM WORK - construction of form work for a simple square column and window cill - Sequence of operation - Practical models of precast and cast in situ form work of the above Construction of form work for beams and floors - sequence of operation - practical models of form work for beams and floors	28	FORM WORK CONTINUED Form Work For Simple Square Columns And Window Cill - Form Work For Walls - Materials Used And Sizes Of Members Sequence Of Operation	7	Draw front elevation vertical and horizontal sections, plan of square columns and window cills on given scale - scaled sectional details Front elevation vertical horizontal sections and plan of form work for beams and floors to a given scale - scaled sectional details	4	Construction	2
19	SITE WORK Continued Form work Continued construction of form work for walls sequence of operation - practical model of form work for walls	28	FORM WORK Continued Form work for walls - materials used and sizes of members - sequence of operation	6	Draw front elevation vertical horizontal sections and plan to a given scale. - sectional details to scale	4	Statistics	2
20	SITE WORK Continued Form work continued - construction of form work for slabs - sequence of operation - practical model of form work to slabs	28	Form work for slabs - materials used and sizes of members - sequence of operations - safety precautions	6	Front elevation vertical, horizontal sections and plan of form work for slabs to a given scale sectional details drawn to a given scale	4	Statistics	2
21	SITE WORK CONTINUED Form work continued - construction of form work for slabs - sequence of operation - practical model of form work to slabs	24	FORCE Definition of force - central loaded beam - to determine the reactions using formula CWM and a CWM simple questions to solve - uniformly distributed beam	6	Draw front elevation vertical and horizontal sections and plan of form work for different designs of slabs to a given scale - Sectional details drawn to a given scale	4	Calculating cutting powder	2
22	SITE WORK CONTINUED Form work continued - construction of form work for slabs - sequence of operation - practical model of form work to slabs	28	FORCE Continued To determine the reactions - to identify the stress in structural members to determine maximum bending moments for beam using formula BM = MR= this bending moment = moment of resistance	6	Draw front elevation vertical and horizontal sections and plan of form work for different designs of slabs to a given scale Sectional details drawn to a given scale	4	Calculating cutting powder	2
23	Preparation of Examination							
24	Examination and End of Module 2							

Syllabus of CARPENTRY & JOINERY TRAINING / Module 3

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
1	SITE WORK Continued Centres Construction of centres turning piece - segmental centre - Semi circular centre, sequence of operation - practical models of segmental and semi-circular centre	28	CENTRES Types of centres 1 Turning piece 2 Segmental centre 3 Semi-circular centre	6	Draw front elevation and vertical section of a turning piece, segmental centre, semi circular centre to a given scale.	4	Mixing of heat	2
2	SITE WORK Continued Centres Continued construction of centres Drop Gothic and equilateral centres - semi elliptical centre - Practical models of above centres - Sequence of operation safety precautions	28	CENTRES Continued - Semi-ellipse centre - Gothic centres i.e. Drop Gothic equilateral Gothic - Supporting easing and striking Application construction members used	6	Front elevation vertical section of a semi elliptical centre Gothic centres to a given scale	4	Mixing of heat	2

Syllabus of CARPENTRY & JOINERY TRAINING / Module 3

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
3	SITE WORK Continued TIMBERING TO TRENCHES - Construction and erection of timbering in loose soil, moderate soil - Sequence of operation - Practical models of timbering to trenches Safety precautions	28	TIMBERING - Types of timbering to trenches - Timbering to loose soil - Timbering to moderate soil	6	Draw isometric drawings and vertical sections of - Timbering to loose soil Timbering to moderate soil to a given scale Sectional details to scale	4	Costing of materials and jobs	2
4	SITE WORK Continued TIMBERING Continued - Construction and erection of timbering to sound soils - Sequence of operation - Practical models of timbering to sound soils - Safety precautions	28	TIMBERING Continued - Timbering for sound soil - Methods used in construction for each kind - Identifying members used for each type	6	Isometric and sectional drawing of - Timbering for sound soil - Sectional details to scale	4	Costing of materials and jobs	2
5	SITE WORK Continued SHORING - Construction and erection of dead and raking shores - Sequence of operation involved - Practical models of dead and raking shores - Safety precautions to be taken	28	SHORING Introduction of shores - Types of shoring e.g. dead, raking and flying - Purpose of applying shores - Methods of construction, erection and dismantling - Materials used and sizes	6	Scaled drawings of - - dead shore raking shore - sectional details to scale	4	Pulleys	2
6	SITE WORK Continued SHORING Continued - Construction and erection of flying shores - Sequence of operation involved - Safety precautions to be observed Practical models of flying shore	28	HEAT - Forms of heat transmission - Comparison of heat insulation properties of various wood fibres and chip boards	6	Scaled drawings of flying shores Elevation and sectional details to a given scale	4	Pulleys	2
7	SITE WORK Continued SHORING Continued Construction and erection of flying shores - Sequence of operation involved - Safety precautions to be observed - Practical models of flying shore	28	HEAT Continued - Effects of colour and nature of surface on heat insulation - Reduction of air draughts - simple calculations	6	Draw elevations and sectional details of shoring to a given scale Sectional details to scale	4	Reaction at points	2
8	STAIRS - Construction of straight flight of stairs - sequence of operation involved in construction - practical models of straight flight of stairs - safety precautions to be taken	24	STAIRS Introduction to stairs - classification of stairs - types of stairs e.g. straight geometrical, dog leg, open well spiral stairs	6	Draw front elevation and sectional details of a straight flight of stairs to a given scale Sectional details to scale	4	Reaction at points	2
9	STAIRS Continued - Construction of straight flight of stairs - sequence of operation involved in construction - practical models of straight flight of stairs - safety precautions to be taken Construction of geometrical stairs - sequence of operation involved - practical models of geometrical stairs - safety precautions to be taken	28	STAIRS Continued Introduction to straight flight stairs - Members used and sizes - Joints used - Rules and regulations governing private & public stairs Introduction to geometric stairs - members used and their sizes - joints used - rules and regulations governing construction	6	Draw front elevation and sectional details of a straight flight of stairs to a given scale Sectional details to scale Elevation and sectional details of geometrical stairs to scale	4	Density Velocity	2
10	STAIRS Continued Construction of dog leg and open well stairs - sequence of operations involved during construction - practical models of dog leg stairs - safety precautions to be taken	28	STAIRS Continued Introduction to dog leg stair - members used and their sizes - joints used - rules and regulations governing construction	6	Elevation and sectional details of dog leg type of stairs to a given scale Sectional details to scale	4	Velocity	2
11	STAIRS Continued Construction of open well stair - sequence of operation involved - practical models of open well stair case - safety precautions to be taken	28	STAIRS Continued Introduction to open well stairs - members used and their sizes joints used - rules and regulations governing construction	5	Sectional details elevation of open well stairs to a given scale	4	Ohms law (electricity)	2
12	STAIRS Continued Construction of spiral stairs - sequence of operation - practical models of spiral stairs - safety precautions to be taken	28	STAIRS Continued Introduction to spiral stairs - members used and their sizes joints used - rules and regulations governing the construction	6	Elevation and sectional details of a spiral type of stairs to a given scale	4	Resistance connections	2
13	Construction of stairs - sequence of operation - practical models of a stair	22	WOOD WORKING machines and power hand tools Wood working machine shop layout machining faults causes and remedies special guards for sawing and planing machines	4	Scaled drawings of stairs Elevations and sections to scale	4	Torque and power	2
14	Construction of stairs - sequence of operation during construction - practical model of a stair	28	Portable powered hand tools - cartridge operated tools Abrasive regulations	6	Scaled drawings of stairs, Elevation and sectional details to a given scale	4	Torque and power	2
15	Construction of stairs and stair cases - sequence of operation involved in making the stairs - practical model of a stair case	28	Portable powered hand tools continued	5	Scaled drawings of stairs, elevations and sectional details to a given scale	4	Effects of forces	2
16	Construction of scaffoldings - sequence of operation involved in making and erecting scaffoldings - practical model of scaffoldings - safety precautions	28	Scaffoldings Materials - types of scaffoldings - put-log and independent	6	Drawing elevations and sectional details of different types of scaffoldings to a given scale	4	Average speeds	2

Syllabus of CARPENTRY & JOINERY TRAINING / Module 3

Subj. Week	Practical Training Module	h	Technology and Science	h	Technical Drawing	h	Applied Mathmatics	h
17	Construction of scaffoldings - sequence of operation involved in making and erecting scaffoldings - practical model of scaffoldings - safety precautions	28	Scaffoldings continued Types of scaffoldings materials used	6	Drawing elevations and sectional details of different types of scaffoldings to a given scale	4	Plotting graphs	2
18	Practical erection of site hoardings - sequence of operation - practical model of site hoardings - safety precautions to be observed	28	SITE HOARDINGS - purposes - materials used - construction of hoardings	6	Sectional details and elevations of site hoarding drawn to a given scale	4	Plotting graphs	2
19	Revision							
20	Revision							
	Revision							
	Trade Test Examinations							
	Trade Test Examinations							
	Graduation and Issuance of Certificates							

APPENDIX VI:

ST. JOHN BOSCO'S SCHOOL TIMETABLES AS PER 1999 ACADEMIC YEAR FOR THE SECOND TERM

Timetable for second term motor vehicle and mechanics section, 1999

PERIOD	1	2	3	4		5	6
TIME	8: 30- 9-30 AM	9:30-10:30	10:30-11:30 am	11:30-12:30	12:30-2:30 P.M.	2:30-3:30	3:30-4:30 P.M.
MON	MV.Technology Ayo Peter	Workshop Practice Bro.Justin	Workshop Practice Bro.Justin	Workshop Practice Bro Justin		Workshop Practice Bro.Justin	CRE Mr.Fred
TUES	Metal work practice Abor James	Metal work Abor James	M.V. technology Ayo Peter	Science & Calculations Ayo Peter.		Engineering Drawing Abor J.	Engineering Drawing Abor J.
WED	M.V technology Ayo Peter	M.V.technology Ayo Peter	Science & calculations Ayo Peter	Science & Calculations Bro.Justin		Workshop Practice Bro.Justin	Mathematics Mr. Guido
THURS	M.V.technology Ayo Peter	M.V.Technology Ayo Peter	Practice Bro. Justin	Workshop practice Bro. Justin		Mathematics Guido Mr.	Workshop Practice Bro. Justin
FRI.	Geometry and engineering drawing Abor James	Geometry & engineerig Drawing Abor J.	Metal work Practice Abor James	Metal work practice Abor J.		English Mrs.Ernesta	Games &sports Okullo patrick

LUNCH

Carpentry section: Timetable for the second term 1999

CLASSES			C/J YEAR I		C/J YEAR II		C/J YEAR III	
TIME	8:30 - 12:30	12:30-2:30	2:30-3:30	3:30-4:30	2:30-3:30	3:30-4:30	2:30-3:30	3:30-4:30
Monday	WORK SHOP	LUN	Technology Motto C.	C.R.E Fred	Geometry Oyo P.	Geometry Oyo P.	Technology Okello C.P.	Geometry Okello C P
Tuesday	PRACTICE	CH	Technology Motto C.	Geometry Okullo. p	English Mrs Ernesta	Technology Oyo Peter	Technology Okello C.P.	Technology Okello C P.
Wednesday			Geometry Okullo P.	Maths Guido	Technology Oyo Peter	Technology Oyo Peter	Maths Guido	English Mrs. Ernesta
Thursday			Maths Guido	Science Motto c.	Science Oyo P.	C.R.E Mr. Fred	Geometry Okello C.P.	C.R.E Mr. Fred
Friday			English Mrs Ernesta	Sports Okullo P.	Maths Goido	Sports Okullo P.	Science Motto C.	Sports Okullo P.

TEA BREAK =10: 30 -10:45 A.M