

MASTER THESIS
TECHNICAL VOCATIONAL PEDAGOGY

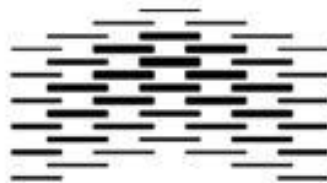
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**IMPROVING MY PRACTICE AS A FACILITATOR OF
LEARNING WHILE USING LEARNER-CENTRED
APPROACHES TO TEACHING AND LEARNING**

**An action research project carried at the section of Technological studies,
Department of Civil and Building Engineering, Kyambogo University, Uganda**

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**OSLO AND AKERSHUS
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Dedication

This work is dedicated to my dear husband Mr. JohnBosco Twesigomwe and my beloved children Lynus Atamba, Lynn Asimwe and Laura Ahereza who have withstood my absence for this long period I have been away.

List of abbreviations used in this report

VET	Vocational Education and Training
DES	Diploma in Secondary Education
PEM/A	Physics, Economics, Mathematics and Fine Art
NCDC	National Curriculum Development Centre
VTC	Vocational Training Centre
CCP	Christian Child care Programme
VTI	Vocational Training Institute
HiOA	Oslo and Akershus University College of applied sciences
PLE	Primary Leaving Examinations
UCE	Uganda Certificate of Education
UJTC	Uganda Junior Technical Certificate
PTCs	Primary Teachers' Colleges
NTCs	National Teachers' Colleges
USE	Universal secondary education
TVET	Technical Vocational Education and Training
BTVET	Business Technical Vocational Education and Training
ITVET	Initial Technical Vocational Education and Training
UNESCO	United Nations' Educational Scientific and Cultural Organisation
UNEVOC	International Centre for Technical and Vocational Education and Training
ILO	International labour organisation
TVE	Technical and vocational education
VET-Carpentry	Vocational Education and Training in carpentry discipline

Abstract

My exposure to learner centred approaches (LCA) to learning as a master student in vocational pedagogy created in me a desire to improve my practice as a teacher from delivering content to learners to facilitating learning and knowledge creation. This desire was a motivating factor for my researching into how I can improve my practice as a facilitator of learning using LCA (experiential learning and cooperative group learning) while working with teacher trainees of technological studies of Kyambogo University. This was aimed at increasing my understanding of how these approaches can sustainably and effectively be used to improve learning outcomes and also with a long term target of enticing the teacher trainees to adopt these approaches later in their own teaching practice.

My project here reported is a participatory action research with a descriptive research design. During data collection, I adopted interviews (conversational and open ended questions), participant observation, photography and documentary analysis. The data collected was then transcribed, coded and presented under themes following the research objectives and questions.

The preliminary phase involved seeking acceptance into the field (KyU) and I identifying challenges faced by teachers in VET institutions in trying to facilitate learning. The findings unveiled quite a number of challenges of which outdated curriculum, lack of adequate tools, equipment and materials, poor staff welfare, lack of close link with the labour market, lack of opportunities for professional development and negative attitude accorded to VET were outstanding.

It was a strange and complex experience for the teacher trainees to make a shift towards learner centred approaches due to the nature of learning that they were accustomed to where they dependent on their teachers for virtually everything rendering them passive recipients.

However, with constant encouragement, guidance and assistance I offered to them during the entire process, I was able to notice a remarkable progress and increased students' interest in the approaches used.

I thus recommend that LCA need to be introduced in VET teacher training institutions so that it can take root in the system and also constant dissemination of such ideas among teachers through seminars, workshops among others should be done to create a positive change towards LCA. The development of VET should be the responsibility of all members of the society with the governments' greater hand in financing VET institutions.

CHAPTER ONE: INTRODUCTION

1.0 Overview

In this research report, I am looking at how I, as a teacher, can improve my technical vocational professional practice while facilitating learning process using learner-centred approaches with emphasis on experiential learning and cooperative/group learning. There are very many factors that affect the general professional practice of formal VET in the field of carpentry but I choose to deal with those that concern me as a facilitator of learning since its where I have a mandate and capacity to influence and cause some changes for the improvement of the general professional practice.

This chapter presents my personal and professional background as a means of creating awareness to the reader of this work about who and what I am and from where my source of inspiration, interest and courage to carry out this study originate. In this chapter, I also give a brief overview of the education structure and a brief description of VET trends in Uganda. I also present the background of this research project which gives a reader of this document an insight into the basis, purpose and above all the reasons why it was worth to carry out this study. From the background to the study it is evident that the work of this project emanates from three previous projects that I undertook since the beginning of this master programme whose results have been essential in directing my study in this project. Based on the findings of the previous works of project one, two and three, I was able to state the problem under investigation and the objectives of this study which have been my light and guide into the whole process of this research project.

1.1 Personal and professional background

I am a vocational teacher whose knowledge and skills are linked to the field of technological Construction subjects-Woodwork, Technical and building drawing as well as building construction among others. Currently, I am a research student pursuing a master's degree in Technical Vocational Pedagogy under the Norwegian quota scheme at Oslo and Akershus University College of applied sciences. The opportunity to study at this University (previously called Akershus University College before the merger with Oslo University College) was enabled by the existing collaboration between Kyambogo University and this University.

My point of departure in this study emanates from my experiences as a teacher trainee of technological-construction subjects and as a teacher in both secondary schools and vocational training institutes in Uganda. It should be noted that by the time I joined Kyambogo University in a vocational teacher training programme, I didn't have any prior training in any of the vocational subjects taught in the programme but I expected to learn them as training went on. At the start of

the study at KyU, I had to choose one of the two options i.e. construction or manufacturing. I chose construction, since I had in my childhood liked construction related courses; however, I never knew what the option entailed.

I found learning in this programme a bit challenging because I didn't have any prior practical knowledge, skills and experience in any vocational field unlike some of my colleagues (Diploma scheme entrants) whom I studied with that had had some experience in plumbing, civil engineering, and mechanical engineering. The teaching methods that were commonly used in our learning process probably did not cater for our individual differences in terms of experiences and needs. Teaching was more theoretical and teacher centred as opposed to practical and learner oriented. More emphasis was put on training in pedagogy than it was on hands-on craftsmanship skills acquisition. However, driven by intrinsic desire to perform better in my studies coupled with my hard work and commitment, I tried my level best to learn what I could afford in the limited time schedules of the programme with the limited resources available. I arranged for private training in carpentry under the guidance of the workshop technician at the section of technological studies. This helped me to gain some woodworking skills which I improved slowly by slowly through constant practice. This was possible then because there were a number of hand tools in the workshop and some machines were still functional unlike today when most of the tools and machines have broken down. By the end of my 3-year study programme I was able to make chairs, tables, cupboards, stools and other good wood pieces from wood turning like sugar bowls, flower vases among others. My final practical project was actually made out of wood-a versatile furniture for use in classroom and for indoor games as can be seen from some of the pictures below.



The pictures above are of me in the workshop practicing woodwork skills

Before joining this master study programme at HiOA, I was teaching in both secondary schools and vocational training centres. Having been taught and trained using teacher-centred approach, I also thought that it was the best method ever. I therefore taught my students using same methods which may not have enabled my students to learn better.

I would put a lot of effort in designing the lesson plan but without minding about the individual students' needs, interests and capabilities because I thought that as a teacher, I knew what they deserved to learn. I used the syllabus to direct me on the content that students had to learn but it was my responsibility to determine how the students are going to learn that content. I would devote my time and energy to make students learn but in most cases I would wonder why some of them could not learn what I teach them especially after failing the exams.

After experiencing and tasting a different way of learning in this master programme at HiOA where a student is responsible for his/her own learning, a student knows when and how to learn and even the why part of it, I have become curious to carry out an action research at the section of technological studies to create my own understanding of how best I can improve my practice as a teacher while facilitating the learning process using learner-centred approaches.

1.2 The structure of education system in Uganda

The National Constitution mandates the government to be responsible for leading in the provision of education and it is the Ministry of Education and Sports (MoES) responsible for the education system in Uganda. However, individual private sector and NGOs are all encouraged to join the government to educate Ugandans. Education in Uganda is provided through multiple approaches including the Formal, Non-Formal and Informal Systems. Within the formal sector, the government encourages a diversity of opportunities including general, vocational and technical structures. Basically, there are four major levels of education in Uganda starting from pre-primary up to tertiary level and these are: Pre-primary, Primary, Secondary and Tertiary. Generally Uganda's education system follows a fairly similar pattern to that of Britain i.e. 2/3-7- 6- 2/5; Two-three years of pre-primary, Seven years of primary education, six years of secondary and two to five years of basic tertiary education depending on whether it is certificate, diploma or a bachelor's degree as can be seen from table 1.

The pre -primary level normally termed as, Nursery/ kindergarten, takes mainly three years but in some schools it takes two years. It is usually undergone by most children in urban centres however villages have also adapted the system. This is privately managed however the Ministry of Education and sports put down regulations to be followed. Primary level takes seven years and at the end of this level pupils are subjected to a set of primary leaving exams leading to award of PLE certificate, which has just started with the introduction of UPE. After this level successful students goes either to a secondary school or Technical school.

Education level	Cycle	Award	Progress opportunities
Pre- Primary	2/3 Years	-	1. Primary Education
Primary Education	7 Years	Primary Leaving Examination (PLE)	1. Lower Secondary (O' Level) 2. Technical school
Lower Secondary (Ordinary Level)	4 Years	Uganda Certificate of Education (UCE)	1. Upper Secondary (A' Level) 2. Primary Teachers College 3. Technical Institute 4. Other Departmental Training Institutes.
Technical School	3 Years	Uganda Junior technical Certificate (UJTC)	1. Technical Institute
Upper Secondary (Advanced Level)	2 Years	Uganda Advanced Certificate of Education (UACE)	1. University 2. Uganda College Of Commerce 3. National Teachers College 4. Uganda Technical College 5. Other Departmental Training Institutes
Primary Teachers College	2 Years	Certificate	1. National Teachers College
Technical Institute	2/4 Years	Craft/ advanced craft Certificate	1. Uganda Technical College
Uganda College of Commerce	2/3 Years	Diploma	1. University
National Teachers College	2 Years	Diploma	1. University
Uganda Technical College	2 Years	Diploma	1. University
University	3/5 Years	Diploma/Degree	1. Post Graduate Studies

Table 1.1: The structure of Uganda's Education System¹

The secondary level is divided into two other levels i.e. Lower secondary usually known as ordinary level and upper secondary known as Advanced level. Lower secondary level which takes four years that leads to UCE certificate runs parallel with junior technical training which takes 3 years leading to a UJTC certificate. After these two levels there is Upper secondary level of two years namely: General secondary education (Advanced level) which runs parallel with 2-4 year courses at technical institutes (craft and advanced craft certificate levels) or a two year teacher training course at PTCs. Above the upper secondary there are many outlets to institutions of higher education and learning which include: University education, grade-V teacher training at NTCs, Diploma courses from Technical colleges and colleges of commerce and other colleges for higher level courses which takes 2-5 years depending on the level of the institution and study programme a person is undertaking.

¹ **Source:** Ministry of Education and Sports (Government White Paper on Education).

From my experience, it is a common practice that students who take up vocational path after primary level will either go for work after junior certificate or continue progressing in the vocational path. There is no possibility for switching to academic education or else they have to go back and start at the lower secondary level. In my opinion, there are three stages considered very important for a child in the Ugandan education system and these are:

Primary seven (P.7): At the end of this level students are subjected to Primary leaving examinations which determine the kind of lower secondary they are to join. Because of the negative attitudes people have about vocational education, many economically-able parents will struggle hard to make sure their children join general academic lower secondary. Vocational education and training is thus left for the low academic achievers and the children from humble families. This level is compulsory for all Ugandan children and free however it has not been fully comprehended by all.

Senior four(S.4): Performance in the Uganda certificate examinations determines the kind of upper secondary school a child is to join. Like at P.7 students and their parents aim at Joining General secondary level which in most Ugandans view is an avenue to university education and a just a few would be willing to join Vocational fields.

Senior six(S.6): At this level students and their parents aim at University education and those who fail to make to the universities are the ones who join Vocational education and training institutions as the second best alternative.

Relating this to this research, my participants were students from general advanced secondary education (senior six); they had no prior vocational training but were admitted to be trained as teachers of technical/vocational subjects. This means that they need training both in practical knowledge and skills as well as pedagogy so that they can be in better position to facilitate learning of their students with proficiency and confidence.

1.3 Vocational Education and Training in Uganda

Vocational Education and training in Uganda dates far back to 1800's during when practical training was provided under traditional education (indigenous education) with the major aim of enabling each member of the society to be helpful to himself and to the community. This was organised either as chiefdoms, kingdom or state. Indigenous education in this sense therefore

refers to the kind of education and training that existed and was practiced by the natives of Uganda before the introduction of the foreign (formal) education by the missionaries in Uganda.

It was through this kind of education that the young people learnt and acquired knowledge and skills in various vocations. Knowledge, skills and values (customs) acquisition resulted from intended and purposeful teaching and skills were passed onto the young people by the old members in their families through the method of apprenticeship. The process of learning was by doing where the young learned as they practised on the job under the guidance of their teachers who were basically their elder relatives and other local people with specialised skills in the society from whom the young learnt to master particular special skills. The skills learnt among others included pottery, wood carving and weaving but all these depended on the environment in which the people lived. This type of education is still evident in the world of work in Uganda as reflected in various informal vocational training practices in Agriculture, hair dressing, tailoring, carpentry and joinery, weaving, ceramics, motor vehicle mechanics among others where young people are trained at the work places by specialists and are later on left to join the labour market as semi skilled workers.

Formal VET in Uganda was introduced by missionaries in the late 1870's. VET training centres were set-up at each church mission centre to train Ugandan people who would fulfil the needs of the missionaries with a main objective of evangelization of the people(Ssekamwa & Lugumba, 2001).It is my submission that missionaries found it necessary to educate Ugandans to read and write so that it could be possible for them to read the bible. They trained technical skills because they needed people to help them with works that required technical knowhow.

In the 1924-25, Phelps Stokes Commission was instituted to establish the nature of the education that missionaries were offering to Ugandans and make recommendations(Ssekamwa, 1997). The Colonial Office in London, in response to the recommendations of this commission, recommended the teaching of technical skills in four ways: the first way was to be through government work-shops on an apprenticeship basis so that people of Uganda could quickly acquire skills while training on job because there was an urgent desire for skilled people to help in civil works under the Department of Works. This great need for personnel resulted from the First World War that made it very expensive to bring in technical people from abroad.

Secondly technical skills were to be taught in special instructional workshops on a production basis due to the fact that there was a need for semi-finished materials for use in construction projects which could not wait for recruitment of trained people who were also lacking at that time. Training of technical skills was also to be conducted through properly instituted technical schools which were already in existence and being run by the missionaries. Technical education was also supposed to be done by primary schools where village crafts were to be taught to primary children (Ssekamwa, 1997). These technical and primary schools were largely left in the hands of the missionaries since they were the ones running the country's education system at the time and again it was very expensive for Ugandan government of the time to spend in such a venture. There was no formal curriculum to follow and therefore the implementation of all these was up to the individual teacher. Teaching was done by successful tradesmen in particular trades who were not necessarily pedagogically trained. They were usually European former army corporals and bridge mechanics who might have got some mechanical skills back in Europe" (Ssekamwa, 1997). The courses that were taught in the formal vocational institutions seemed to be an improved version of the indigenous VET fields and they included carpentry, shoe-making, tailoring, brick-making, and some mechanical works(Ssekamwa, 1997).

The first technical teacher training course was introduced in Kampala Technical Institute (the current Kyambogo University) in 1954 to train technical teachers (Ssekamwa & Lugumba, 2001, p. 70).It is obvious that VET teacher training was started after the colonial government had realised a need to leave behind trained teachers who would in turn train others for the country's industrial development when they leave after independence. This technical teacher training, however, did not last for long. It closed down six years later in 1960 and was later re-opened in 1973 but it only trained teachers at certificate level and later at diploma level(B.Okello, 2009, p. 35). It is my opinion that the re-opening of technical teacher training in 1973 was because majority Europeans and Asians who were in the institutions had fled the country after the military coup led by Idi Amin which necessitated training African teachers to supplement the small staff in the institutions. This historical trend has impacted a lot on vocational and technical teacher training in Uganda because up to now Kyambogo University still stands as the sole trainer of technical teachers and it is my belief that Kyambogo cannot fully satisfy the present vocational institutions' demands for teachers.

After independence in 1963, Castle education commission was appointed to revise the system of education so that it could better serve the needs of the citizens at that time. This Commission recommended the abolition of the vocational schools (rural trade schools, farm schools and home

craft centres) which were operating alongside general academic schools. This could be attributed to the negative attitude Ugandans had developed about vocational education. They thought VET which was given at that time was for academic failures and therefore there was a need for a new form of VET. In this respect, the Commission promoted technical institutes, technical colleges, agricultural colleges and district farm institutes as the new road to vocational training (Ssekamwa, 1997). Despite all these changes in the system much emphasis, however, was put on academic secondary school education where many new government and private secondary schools were established. There was no much effort to change the curriculum to suit the country's vocational needs and to address the low social status of VET that had been inherited from the colonial masters. Therefore the few vocational institutions at that time continued to teach the very curriculum which the colonial government bestowed to Uganda at the time of independence.

Due to the trade embargo that was present during Idi Amin's regime in the 1970s, it became hard to access industrial machinery, tools and other equipment from other countries. This led to restoration of indigenous vocational education and intermediate technology was developed to replace foreign technology. Many workshops for forging tools like hoes, pangas and machine parts mushroomed in the suburbs of Kampala like Kisenyi and Katwe. Idi Amin, the president at that time, in his attempt to Africanise the country established three vocational training institutions at Nakawa, Jinja and Lugogo to train Ugandans in vocational skills that were in demand by the country's workplaces. Unfortunately at this time qualified Ugandans had left the country and so there were no experts to run these institutions and ordinary Ugandans also undervalued vocational education.

When Amin's regime was overthrown in the 1980's, all the efforts to develop vocational education, were devitalized by the governments that followed; instead academic secondary school education was emphasized at the expense of vocational education. Many academic secondary schools sprung up in the country and also more national teacher's colleges were set up in the 1980's intended to reinforce training of secondary school teachers. The governments of the time encouraged importation of foreign technology which overpowered the locally developed technology which had begun to flourish during Idi Amin's reign. However, in 1987, the government of Uganda set up a National Education Policy Review Commission to revise its education system (Uganda, 2001). Several recommendations were put forward for the improvement of vocational education and in response to these recommendations the Government White Paper on implementation of the report was put in place in 1992. Following the presentation of these recommendations, BTVET (department in charge of business, technical vocational

education and training) was instituted at the Ministry of Education and Sports in 1999 to take responsibility for all concerns in VET. Training of technical teachers was then restored at ITEK the current Kyambogo University. All these initiatives were aimed at attempting to improve vocational education by making it work-oriented and to have a continuous and reliable labour force for the country's development.

From own experience, very little has been done to improve VET in spite of all the encouraging recommendations that were stipulated in the Government White Paper towards development of vocational education instead academic secondary school education was boosted as evidenced by initiation of Universal Secondary Education (USE). Vocational education is still poorly funded and with limited training facilities, coupled with machines and tools in a sorry state as I observed this during my study at Kyambogo as a student and during the implementation of this research. Generally, there have hardly been changes in curriculum, teacher/instructor training is still at a low rate and teaching is still dominated by theory as opposed to practical learning which may hinder students' knowledge and skill acquisition yet it is the main purpose for VET.

While the government under BTVET is trying to improve VET at a higher level it is also our duty as stakeholders, teachers in the service to improve our own practice while we execute our duties at our levels. It is against this experience that I, as a teacher, decided to try out some teaching strategies that encourage learner active and practical participation in the learning process in attempt to improve my professional practice and the entire vocational practice of VET in Uganda especially in the field of carpentry.

1.4 Background to the study

This research study is a social innovation² with an action research approach which culminates from the works of my first year in this master programme that was divided in three projects as already mentioned. Project one was a self study where I documented my understanding and experiences of my practice as a teacher of technological subjects, carpentry in particular.

In project two, I carried out a comparative study between Norway's and Uganda's VET practices with carpentry as my area of focus. I tried to study the needs of my society in relation to VET-carpentry practice with Norway's VET being a reference point. I made visits to various upper secondary schools in Norway to find out how learning is organised and the strategies employed in the teaching and learning of carpentry with intent to emulate those strategies that can be applicable in Ugandan situation. From this study, I found out that the needs and expectations of

² Social innovation is used to describe the development and implementation of new ideas (products, services and models) to meet societal needs.(OECD 2009, p.42)

society as regards VET-carpentry are diverse and that VET is capable of satisfying them if it is properly and carefully organised. I also found out that, in Uganda, there is a big gap between what is expected and needed of VET in general and carpentry in particular (the utopian practice) and what is actually done on ground(actual practice). I thus found it very necessary that something is done to reduce the gap if we (Ugandans) are to reap the fruits of VET. This led to project three which aimed at identifying the possible strategies that could be employed to reduce this very gap.

Having identified, analysed and documented various possible options that could be employed to improve the technical, vocational professional practice of VET-carpentry in Uganda in project three (end of year one report), I went ahead to try out those that I thought could be accomplished in the little time available during my field work and the results from this development research project are presented in the chapter four of this report.

1.4.1 Meaning of VET

The term Vocational education and training (VET) falls under different nomenclatures following different geographical areas. These names include: TVET, BTVET, VET, ITVET, etc. According to UNESCO-UNEVOC, VET, TVE, and TVET are used to mean the same thing (Atchoarena & Delluc, 2002, p. 16). The deviation in the terms from the standard term was accepted to acknowledge the concepts used in different national systems (Atchoarena & Delluc, 2002, p. 18). However, a close examination of the above nomenclatures indicates that they all focus on preparing an individual for the world of work. Different scholars have tried to define this type of education and no single definition has been chosen as the most appropriate. Some of these definitions are given here below.

According to the 2000 report on Australian government service³, VET can broadly be defined as that part of the education and training system that provides individuals with employment related skills and learning. This means that the roles of VET are to: provide skills that enhance ability to enter the workforce, retrain and update workforce skills; and provide a stepping stone to further tertiary education. This implies that VET is the education designed to lead participants to acquire the practical skills know-how and understanding necessary for employment in a particular occupation, trade or group of occupations or trades

VET is also used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in

1-obtained from <http://unesdoc.unesco.org/images/0012/001293/129354e.pdf>

various sectors of economic and social life (UNESCO, 2001, p. 7). It is further understood to be an integral part of general education; a means of preparing learners for occupational fields and for effective participation in the world of work; an aspect of lifelong learning and a preparation for responsible citizenship; an instrument for promoting environmentally sound sustainable development; and a method of facilitating poverty alleviation. (UNESCO, 2001)

In the light of above, it is clear that the central point is the preparation of learners in occupation related skills, knowledge and understanding so as to be able to participate in the world of work. Therefore, quality VET should endeavour to develop the individual's knowledge of science and technology in a broad occupational area requiring technical and professional competencies and specific occupational skills. National VET systems therefore need to develop the knowledge and skills that will help the workforce (VET graduates) to become more flexible and responsive to the needs of local labour markets, while competing in the global economy. This can be achieved by introducing and enabling VET reforms that endeavour to integrate workplace-based learning and training into the vocational education curriculum and emphasising learning through practice done either in the school workshops or workplaces. VET systems must also be open and all inclusive to give even the most underprivileged access to learning and training. The opportunity for people in urban and rural communities to equip themselves to lead productive and satisfying lives will undoubtedly be critical to the prosperity and well-being of the community.

As a teacher, I am in accord with the above scholars. I perceive vocational education as a path of education which provides the learner with the knowledge and practical skills needed for entry into the world of work either as an employee or as self-employed. The purpose of vocational education is primarily to prepare people for useful employment in recognized occupations. However, based on personal experience during my training at Kyambogo University and the four years experience in the field of work as a technical teacher, I observe that emphasis is put on theoretical learning at the expense of the practical work recommended and emphasized by VET which may not encourage VET students to acquire and enhance the desired practical skills for performing in their work fields.

1.4.2 Needs of the society in relation to VET-carpentry

Based on the results of project two, the needs of the society as regards VET are common for all vocational trades, carpentry inclusive. These needs were identified based on the aims and objectives of VET as read from literature and other views put forward by a number of scholars and other concerned members of the society and incorporating my own experiences. They include:

VET in Uganda is meant to equip learners with creative and innovative skills in order to produce aesthetical and ergonomical wood products for the society consumption. This was reflected in the IDE discussion paper No. 171 on Transformation of a woodworking and furniture industrial district in Kampala, Uganda of 2008(YOSHIDA, 2008, p. 3) where the paper points out that due to the world wide trends towards urbanisation along with the information diffusion through globalised media like internet, televisions and satellites that typifies modern urban life styles, furniture consumers have become more familiar with modern styles that are simple and minimalist as well as light weight. It continues to note that these urbanised consumers have less residential space than their predecessors and that their household units are of wide variety including not only those who are married and married with children but also those who are single living with younger and old generation, single mothers, pensioners both single and coupled, divorced and widowed. The demand for household space and furniture has become more complex demanding flexibility on the furniture producer's side. Consumers mainly in urban middle class in developing countries, Uganda inclusive, have begun to show strong preferences for global modern designs over traditional heavy extravagant furniture styles. Based on this, VET-carpentry should not only train people to acquire employable skills but also equip its graduates with creative and innovative skills relevant enough to produce high quality aesthetic and ergonomic furniture products to meet the demands of these urbanised modern consumers.

VET in Uganda is intended to develop learners' competences, understanding and responsibility in relation to craft, profession and society. It is seen as a form of education responsible for training people to be more responsible and self reliant by providing them with concrete skills that make them competent in their vocations or trades so that they can perform their duties as practitioners of responsibility in terms of services they provide in the society and in decision making. It is also considered as education and training for self employment to absorb large numbers of unemployed youth and income generation for sustainability and poverty reduction. The need for VET in Uganda is partly based on the assumption that VET can help to solve the problems of unemployment, poverty reduction and economic growth for the population. It is assumed that someone with employable skills acquired from VET will find employment leading in turn to earned income and high SOL.

In other words the skill-for-poverty reduction assumption is directly linked to skills-for-employment assumption as reflected by Hope institute of Uganda⁴ where VET is seen as one key to eradicating poverty for many people in Uganda and Africa at large where it is pointed out that

⁴ <http://www.hopeinstituteuganda.org/community/>

“...we do feel that the teaching of simple skills like making chairs and beds and other furniture will be a key in getting young men and women off the streets, away from alcoholism and other high risk behaviours that are rampant in Uganda and Africa at large” .

Both assumptions presuppose that work is a primary route out of poverty and that skills must somehow result in work(King & Palmer, 2010, p. 44&45). While it is not disputed here that decent work is the main route out of poverty, several basic issues as suggested by(King & Palmer, 2010) must be considered, for example:

- i. Who gains access to VET skills? What groups of people are /are not accessing VET skills.
- ii. What does it mean to acquire VET skills? What if the skills are acquired in low-quality training institutes with broken tools, few training materials and unmotivated and poorly trained instructors?
- iii. How do the acquired skills impact on employment, poverty reduction and social cohesion?
- iv. In what kind of work are the skills used? Is it work in formal or informal economies? Is it wage-work or self employment?

Based on King and Palmer’s argument, all these issues have to be addressed if VET is to meet the need for reduction of unemployment and poverty and to bring about social cohesion. Reflecting upon the situation in Uganda, I find that not all that have acquired VET training have managed to get jobs and even those who get them may not be capable to steer development because they only get meagre salaries.

VET is seen as an education and training for knowledge and skill acquisition to meet the current demands of the world of work and versatility to meet the vicissitudes of life and demands of an unknown future. Our world is changing and we need more skills than ever. The World Bank⁵ supports this where it states that developing countries need to improve productivity throughout the economy if they are to compete successfully in the era of rapid economic and technological change. This not only require capital investment, but also a workforce that has the flexibility to acquire new skills for new jobs as structures of economies and occupations change. This means that it is the responsibility of VET to train learners to acquire enough competence for the flexibility and productivity of the labour force.

VET is also seen as training for equality and social cohesion. It is highly believed that quality VET brings about social equality, cohesion and well being of the members of the society who have acquired this training. Professor Unwin Lorna asserts that the development of meaningful,

⁵ Retrieved from <http://www-wds.worldbank.org>

high quality vocational education is vital for social justice and social cohesion as well as for economic well being (Lorna, 2009, p. 3). It is expected to provide the basis for further education and assist VET learners and teachers in their personal professional development. This means that VET should be properly organised to allow both vertical and horizontal progression; that is to say progressing both in knowledge and skill acquisition and also in qualifications.

VET is charged with the duty of furnishing students; children, young people and even the adults, with the tools i.e. knowledge and skills they need to face the tasks of life by qualifying them for productive participation in today's labour force and supply the basis for later shifts to occupations as yet not envisaged. Students should be enabled to develop relevant skills for specialised tasks but also provide them with a general level of competence broad enough for re-specialisation later in life-an aspect of lifelong learning. The competence gained should enable graduates to gain admissions to the present day working and community life and the versatility to meet the vicissitudes of life and demands of an unknown future. Hence VET should impart attitudes and learning to last for a life time and build a foundation for the new skills required in a rapidly changing society. This means that the system should be open so that it is possible to return repeatedly for re-education for professional development without any formal barriers.

In the light of above, it can be seen that the needs of the society in regard to VET are very diverse and are economical, social, political, and educational. It is my submission that it is of paramount importance for VET institutions, teachers and all other stakeholders to devise ways and strategies geared towards the achievement of these needs of the society. This may call for changes in teaching and learning approaches so as to enhance acquisition of knowledge, policy formulation and curriculum development and implementation among others.

1.5 What is my concern?

From the aforementioned description of the meaning of VET and the needs of the society, Vocational education in Uganda is aimed at producing craftsmen, technicians and other skilled manpower to meet the demands of industry, agriculture, commerce and teaching of vocational disciplines. It further aims at stimulating and developing intellectual and technical growth of students in order to make them productive members of the society as reflected in the Ugandan government white paper of 1992(Uganda, 1992). VET is thus expected to prepare learners for jobs that are marked by practical activities, traditionally non-academic, technical and totally related to a specific trade, occupation or vocation.

It is my observation that vocational education assumes that the learner directly develops practical undertaking, knowledge and expertise in a particular group of techniques or technology. To

achieve this, VET should be directed towards tasks that reflect real life-work situations conducted either in workshops, industries and companies to encourage learning by doing or experiential learning. Learning activities at school should be made synonymous to the activities in the workplace so as to build capacity in the learner to apply the acquired knowledge and skills to the world of work which can be achieved through involvement of learners into practical activities that are relevant to the needs /demands of the society/work place.

Though in the abstract it may be regarded as so, the reality on the ground is quite different. Through personal experience as a teacher in vocational training schools and as a graduate of technological studies from Kyambogo University, I have found that this kind of education in Uganda emphasizes more theory about the technology and the trade in general⁶ and devotes much less time and effort to practice. Learning process is more centred on the content/teacher than on the learner. In this case the teacher decides what to learn, how and when to learn it, where and why students should learn it, rendering the learners passive recipients of the information that the teacher gives them through lectures or lesson notes. This probably does not allow learners enough opportunities to exercise what has been taught so that they can learn from what they do instead it encourages cram work which consequently hinders skill acquisition and development.

The system of education in Uganda is too exam oriented. Teachers mind so much on helping students to pass exams rather than students' skill and knowledge acquisition and development. A student is considered successful based on final, in most cases, theoretical examinations and not on what the student can do at the end of the course. This could probably be the reason why graduates from this system of education are labelled incompetent in the world of work for they cannot bring any skill to realisation with ease. Most teachers out of this system cannot teach practical subjects with ease and proficiency and this could explain why they also resort to teaching of practical subjects theoretically. For this time I have been introduced to the principles of vocational pedagogy and through my own experience in the field of work, I have realised that this nature of learning that vocational students in Uganda are subjected to, cannot make them competent in their practical oriented trades to meet the needs of the society.

In the light of these experiences, it was important to devise strategies that can bring about an improvement in the vocational professional practice of VET-carpentry in Uganda and my own professional practice as a teacher. This led to project three where various strategies were suggested including making changes in the methods of teaching and learning, curriculum

⁶ From my personal experience, I have found that the teaching emphasises theory about technology and the trade. This is consistent with an education system that is examination-oriented. Institutions aim at preparing students to attempt examinations using pen and paper resulting into memorising and internalising of facts without relating them to work and working environments.

development, VET policy formulations and increasing the collaboration between VET institutions and the society/world of work in order to reduce the mismatch that may result from lack of knowledge of the labour market requirements by the schools.

The theories of learning that I have been exposed to in this master study programme have made me to understand that people learn better when they are actively involved in their own learning for they know better what and why they should learn. I have come to understand that teaching is not about helping learners to accumulate knowledge that is passed onto them by the teacher but rather about helping them to make sense of the new information (no matter its source), integrating it with the existing ideas and applying their new understanding in a meaningful and relevant ways (Killen, 2007). I have learnt that as a teacher, my role is to guide, counsel and mentor students so that they can learn but not to act a pool of knowledge. Inspired by the constructivist theory of learning, I have come to appreciate the idea that learners can construct their own knowledge from their own experiences and thus should be given a chance to do in order to derive meaning from whatever experience they undergo. As noted by Mjelde (1993, p. 19), learning is not be seen as anything that happens inside a student's head when he/she listens to a teacher or reads a book but should be known as to be fundamentally interactive process where both the learner and the teacher are playing active roles but with more emphasis put on the learner since it is whom the learning is intended. Felder.M and Brent (2003) points out that the only way a skill is developed-cooking, critical thinking, writing, technical skills ... is practice. Trying out something, seeing how well or poorly it works, reflecting on how to do it differently, and then try it again to see whether it works better.

Having reflected upon above views (see chapter two also) coupling it with my experiences as a teacher and a learner both at KyU and HiOA, I chose to make a shift in my practice as a facilitator from teacher-centred to learner-centred teaching. This study therefore was carried out to experiment learner-centred approaches to learning with emphasis on experiential learning; learning through action and reflection as well as group/cooperative learning in order to create an understanding of how best they can be employed to improve learners learning outcomes. I carried out this study on and with teacher trainees of technological studies with a long term intention that they too could learn how they can employ them in their own practice when they later join the world of work so as to cause a sustainable improvement in the teaching practice in Formal vocational education in Uganda as a whole.

1.6 Purpose of the research

This research was aimed at improving my practice in facilitating learning through use of learner centred approaches to teaching and learning. Thus this study was carried out to experiment with the learner-centred approaches (experiential learning and cooperative group learning) to teaching and learning of vocational subjects while facilitating the learning process of teacher trainees of technological studies in order to increase my understanding of how these approaches can sustainably and effectively be used to improve the learning of students. Since this study was carried out with teacher trainees, I also had a long term target of enticing them to adopt and apply those approaches later in their own teaching practice.

1.7 Problem statement

How can I improve my practice as a teacher in facilitating students' learning process using learner centred approaches while working with the teacher trainees of technological studies at Kyambogo University?

1.7.1 Explanation of the problem statement

Learner centred approaches as used in this report refer to strategies that emphasise the central position of the learner in the learning process by making him/her an active participant in all aspects of his/her own learning. In this study the approaches adopted focus on the use of experiential learning (learning through acting and reflection) and cooperative group learning.

Having been a teacher trainee under technological studies at Kyambogo University I observed that students especially A 'level direct entrants are at a disadvantage in aspects of practical skill acquisition in a sense that teaching in various practical course units is more theoretical. More emphasis is also put on teacher training at the expense of vocational practical skill training. Yet after training as teachers, they expected to impart practical skills and knowledge to their students to be. One may wonder how one can teach what one is not skilled in! Or how can a person give out what he/she does not have!

With such intriguing ideas in my mind and after a thorough study of various strategies that allow students' active and practical involvement in learning process, coupled with the experiences that I have acquired from the methods used in the learning process in this MAVP-10 programme, I decided to try out some learner centred approaches in my own practice while facilitating students learning in attempt to improve my teaching practice. This was also to enable students acquire practical knowledge and skills in their course subjects while learning and developing their competences as teacher trainees in teaching methodology and to enable them test and evaluate the

impact of such methods on their own learning process so that they too could employ them in their own practice as future teachers.

1.8 Research Questions

- What challenges do teachers in VET institutions face during the teaching and learning process?
- How can experiential learning and group learning be effectively and sustainably employed in facilitating students' learning process?
- What are the likely challenges due to the application of the above mentioned approaches in the teaching and learning process?
- What possible strategies can be developed to overcome the challenges due to the use of the above mentioned approaches in the teaching learning process?

1.9 Objectives of the research

- To find out the state of art as regards teaching and learning in VET institutions focusing mainly on the challenges that teachers face in the teaching and learning process.
- To develop an understanding of how learner-centred approaches: cooperative group learning and experiential learning can be effectively and sustainably used in facilitating students learning process.
- Ascertain the possible challenges in the use of the above mentioned learner-centred approaches in the teaching learning process
- Develop possible solutions to the challenges faced in the use of learner-centred approaches mentioned above in the teaching learning process.

1.10 Scope of the research

The content scope of this research project is based on the objectives and the questions of this study. In the first and the second objectives the emphasis was on examining the impact of learner centred pedagogical strategies on students' learning process and how group learning and learning by doing can be sustainable methods of facilitating students' teaching- learning process. In the third and the fourth objectives the challenges that emerged as a result of the application of learner centred approaches in the teaching learning process and the suggested solutions to these challenges were considered.

This study project was based on year one and year two teacher trainees of technological studies who were pursuing a diploma in secondary education in the field of technological studies (DES) at Kyambogo University. For purposes of situational analysis, however, the study also included practicing carpentry teachers from Kyambogo and Nakawa VTI, one student of carpentry at

Nakawa VTI, practicing carpenters within Kampala area and an official from NCDC. Though the study involved all these other VET stakeholders, it was based at the section of technological studies, department of Civil and Building Engineering, Kyambogo University.

1.11 Significance of the research project

The study unveiled the strengths and challenges associated with employing learner centred approaches to teaching and learning and these will act as a point of departure for future plans as regards teaching and learning in my own practice as a teacher and the practice of my students as future teachers of VET subjects.

The experiences acquired from the whole research study, as a research student; have enhanced my knowledge, abilities and understanding in carrying out action research which I believe will have a positive impact on the improvement of my own practice as a teacher.

1.12 Limitations of the research

There were very many limitations that were experienced in the course of this research which might have impacted on the activities and the results of this study process however the most significant ones were:

Limited time for the research: The two hours per week that were assigned for the course units that I was facilitating was not actually very adequate to do all activities that I had planned to do with my participants who were my students however we managed to do what we could afford within the stipulated time and it's the results of what was done that will be reflected on and presented in the chapter of findings.

Limited tools and materials especially for woodwork students made it hard for me to supervise my students during practical sessions. This was because the workshop at the section of technological had no tools and machines for students to use; all machines were down. They only accessed tools from the workshop at the department of civil and building engineering on weekends when I could not manage to be there with them since I had a family that needed my attention on such days. To ensure that there was supervision and guidance for the students, I asked the technician at the department of civil and building engineering to always step in for me and help them with the tools and any other assistance whenever they needed it while I am away which I believe he did since my students could afford to produce the items that they were asked to at various times.

1.13 Definition of terms used in this report

Learning: Learning in this study refers to a holistic process of acquiring and developing new or existing knowledge, skills, attitudes, behaviours, understanding, values and wisdom which may occur as a result of experience, habituation or by conditioning and may occur consciously or unconsciously.

Teaching- a process or activities that a teacher is involved in to ensure that learning occurs. It involves helping, guiding, counselling and mentoring students so that they can learn and thus a **Teacher** is seen as a facilitator, guide, coach, counsellor and mentor in the process of learning to enable students to learn.

Skills: In this study skills refer to the capability of accomplishing something with precision and certainty and the ability to perform a function, acquired or learnt with practice.

Labour market: This means the state of demand for graduates from the formal vocational institutions by the world of work and **World of work** refers to both paid up employment and self employment in this report.

Indigenous: By this I refer to “home-grown”, local Ugandan or non foreign practices and procedures.

Content: For the purpose of the study, content means the material that is taught to trainees of carpentry.

1.14 Organisation of the report

This report consists of five chapters which are: Introduction, related theories and concepts, Methodology, The story of actions and learning process and Discussion, Conclusions and Recommendations.

Chapter one is introduction to the study which constitute: personal and professional background, an overview of the structure of education system in Uganda, the background of the study which consists the meaning of VET, an overview of VET in Uganda and a brief account of the needs of the society in regards to the vocational professional practice of VET-carpentry in Uganda, the problem statement, the purpose and the objectives and research questions, the scope and the significance of the study, limitations of the study project, definition of terms used in the study and the summary of chapter one.

Chapter two presents theories and concepts related to the topic under study. It comprise of an overview of VET in Uganda and associated challenges in teaching and learning, theories on teaching and learning under VET especially using learner centred approaches and action research. **Chapter three** describes the methodology that I used during this research project. It

encompasses the research design and planning, the population and the methods of data collection and analysis.

In chapter four I present, interpret and discuss the results that are well thought as being relevant to the experimentation of learner centred approaches to learning during the course of this research. Thus it presents the story of actions as they unfolded. **Chapter five** presents the conclusions and recommendations as the result of the discussion and analysis of the data in chapter four which builds up the way forward for this study.

1.15 Summary of chapter one

This section of the report brings out the summary of all items presented in chapter one of this report. In this research, the focus is on learner centred approaches for the improvement of the learning process of teacher trainees of technological studies at Kyambogo University. I thought that by introducing them to different learner centred approaches to teaching and learning of vocational subjects, they will be able to employ them later in their own teaching practice.

The purpose of this study project was to try out some learner centred approaches to learning of vocational subjects with teacher trainees of technological studies in order to be able to develop my practical ability in facilitating learning and an understanding of how these strategies can sustainably and effectively be employed to improve students' learning outcomes. This study was guided by four objectives which are: establishing the state of affair in VET institutions focusing on challenges teachers encounter, examining the impact of learner centred approaches to the teaching and learning process, establishing the possible challenges that may result due to the use of these approaches as well as finding out the possible and workable solutions to such challenges.

The process of this study presumably benefited the teacher trainees who participated in this study in a sense that they were introduced and encouraged to adopt the mode of instruction that actively involves them in their learning process both mentally and physically thus enabling them to acquire knowledge, skills and attitudes necessary for them to operate in the world of work. The interest in these approaches developed among the teacher trainees will act as a catalysing element to effect changes in the teaching and learning in the VET institution in Uganda which will eventually contribute to general improvement of the technical vocational professional practice of VET-carpentry in Uganda. The process has benefited me as a researcher to acquire practical experiences in carrying out action research.

CHAPTER TWO: THEORIES AND CONCEPTS RELATED TO THE STUDY

2.0 Overview

In this chapter I present theories, views and concepts from different scholarly articles that are related to the subject under investigation which have inspired me and have influenced this study greatly. As Mikkelsen (2005) asserts, theories help to frame the way we think and approach a study of a topic. Theories give us concepts, provide basic assumptions, direct us to important questions and suggest ways for us to make sense of data. In other words theories make us to think through our research and actions. They help us to increase our awareness of the interconnections and of the broader significance of information. Theories help us to connect a single study to the immense base of knowledge to which other researchers subscribe. Mikkelsen (2005) argues that when we fail to make our theories and assumptions explicit we may fall into a trap of making hazy decisions, thinking, faulty logic and imprecise concepts.

In the light of the above, I found it vital to carry out a study of some theories so as to be able to contextualise my research and to have a valuable base of existing knowledge so as to be able to refer to them where need arises. Killen (2006) too observes that teachers and teacher education students need a broad and deep understanding of the principles of effective teaching and learning if they are to have a significant influence on their students' learning. He argues that this understanding cannot be achieved without taking an advantage of the key messages in the enormous amount of literature that describes research and practice in teaching.

This chapter is thus intended to build own understanding of the theories and concepts related to problem under investigation so as to build a knowledge base from where discussions of the solutions for the research questions of this study will emanate. It presents theories and concepts related to teaching and learning and knowledge creation as well as educational research and action research approach in particular. I have found these theories, views and concepts significant and fundamental in directing me in an effort to improve my practice as a facilitator of learning and in the execution of this research project.

As a master's research student of vocational pedagogy, I have been introduced to various scholarly views, ideologies and theories which have impacted on my understanding of teaching and learning. I have chosen specific ones in my interest so as to enable me to analyse their implications to human's learning process and later use some of them in the discussion and analysis of my research results. Their use in this report is dependent upon my understanding, interpretation and reflection upon them as applied in the facilitation of teaching and learning process and research process.

2.1 Perception of teaching

Basing on the nature of education system in Uganda and also on own experience as a student at all level of my education in Uganda, I understood teaching as management of the learning situation by the teacher which involves the pre-active activities of planning, sourcing, designing and preparation of the content followed by the direct interaction between the teacher and the learners that finally ends with the pro-active activities of evaluation and re-designing for further teaching. In most instances, I understood it as giving of a lot of written material in form of notes to the learners whose role is to sit behind fixed desks listening and copying the material given by the teacher, expected to memorise and reproduce them at the end of the day when they are subjected to examinations.

Based on my experience as a teacher and as a master student of Vocational pedagogy, I have come to realise that this traditional understanding of teaching process creates an expert-novice relationship where the teacher is placed in the position of the expert and assumes full control of the learning situation while the learners are the novices whose role is limited to listening, receiving, memorising and reproducing the information given unto them by the expert teacher whenever demanded to do so. A teacher is considered a sole source of true knowledge which must be presented to learner for him/her to learn. In this process a learner is a passive recipient of the information that the teacher gives him. It does not allow them to learn from one another or help one another in their learning process as helping each other is considered cheating as observed by Olav Eikeland in (Reason & Bradbury, 2001, p. 145), thus it promotes unnecessary competition, selfishness and individualism among learners.

This perception of teaching is synonymous to what Freire refers to as the 'banking concept of education' where he compares teaching as an act of depositing, a teacher as a depositor of information whereas the students are the depositories (Freire, 1972, p. 53). Freire analyses closely this teacher- student relationship in the teaching -learning process and reveals a narrating subject (the teacher) and the listening object (the student) where he points out that the teacher uses the word of the mouth to tell the content of his narration, detached from reality, disclosed from totality that engendered them and could give them significance. The role of the student is limited to only listening, receiving, memorising and reproducing the narrations of the teacher without question and thus the learner is not provoked to get deeper understanding and true significance of what has been given to him/her. Thus teaching becomes an act of depositing; a teacher becomes the depositor while the learner becomes the depositories. In case of teacher communicating, he will only make deposits which students will receive and stores as deposits which part of it can be withdrawn any time if need arises. With this understanding of teaching, knowledge is seen as a

gift bestowed by those who consider themselves knowledgeable upon those they consider to know nothing. The teacher's role therefore is to fill the students with the information and the scope of action allowed to the students extends only as far as receiving, memorising and repeating what has been given to them by the teacher(Freire, 1972, p. 53).

This Freire's banking concept of education is synonymous to teacher-centred approach to teaching and learning process where a learner is assumed to have no prior knowledge on the content to be learnt and therefore the teacher organises the subject matter, lectures and demonstrations in such a way that he/she teaches the same thing to all students at the same time. The teacher thus treats learners as if they were objects to be filled; those objects that get filled up are the students that will be assumed to have understood and are labelled better students whereas those that are not filled up, will be students who will have not understood and will be labelled bad students or students with low intelligence.

Having been introduced to principles of pedagogy and incorporating own experiences as a teacher, I have realised that this approach to teaching does not enable students to learn and understand what has been taught, reduces their creativity and consequently hinders knowledge creation in a sense that the more students concentrate on storing deposits(information from the teacher) the less they will develop their critical thinking and consciousness which would result from their active interaction with the content as transformers of the world . Freire argues that knowledge emerges through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world and with each other. In this case students are not just docile listeners but rather critical co-investigators in dialogue with the teacher (Freire, 1972, p. 62). He further argues that apart from inquiry and praxis, individuals cannot be truly human. This implies that students should be seen as active subjects in any learning situation and encouraged to actively participate in all the learning activities since it is through their interaction with the learning material and reflection upon it that they will develop an understanding of what has been taught and learnt.

It is true that good teaching gets learning started but it should be noted that learning is consummated by the learner's own efforts towards their own learning. Therefore students should be actively involved in their own learning, in the selection of methods to be employed and also in evaluation of their own work and progress. Students should be encouraged to set their own targets/ learning goals which they should strive to achieve.

As noted by Mjelde (1993, p. 19), learning should not be seen as anything that happens inside a student's head when he/she listens to a teacher or reads a book but should be known as to be

fundamentally interactive. She notes learning is the internalisation of the schemata which incorporate cognition, perception and action and that these schemata are made meaningful by jointly carrying out activities by an expert (teacher or trainer) in such a way that the learner gradually masters successfully more different parts of the task until he/she can be able to take over more complex stages without the needs an expert to assist him/her. This means that learning is ordinarily a joint activity and therefore both the teacher and the learner must work hard to achieve it. This is because teaching and learning are two different processes. Teaching is done by one person and learning takes place in another person and not that all that is taught is directly transferred to the learner rather the student sorts out what he/perceives to be meaningful and relevant to his needs. Therefore students play a big role in their own learning and should be encouraged and given an opportunity to actively participate in all the activities that facilitate him to learn.

2.2 Learning as applied to vocational pedagogy

Learning is a holistic complex process involving cognitive, affective and social elements (Bjerknes, 2002). It is a process that involves making connections, identifying patterns, and organising previously unrelated bits of knowledge, behaviour, and action into patterned wholes. Spady (2001, p. 18) looks at learning as a change in understanding and behaviour that results from encountering new experiences while Lovat and Smith cited by Killen (2006) refer to learning as an enterprise of meaning making within particular contexts. These definitions of learning highlight three vital points; that learning results in change in understanding, changes in understanding are a direct result of learners experience and their thinking about their experiences and that these changes in understanding enable learners to change their behaviour.

According to constructionists like Dewey, Piaget and Vigotsky, knowledge is not something that is out there independent of the knower rather it is constructed for and by ourselves as we learn. Learning is not just a passive process of simply receiving information, rather it involves deliberate progressive construction and deepening of meaning (Killen, 2007, p. 8). Therefore learning neither refers to understanding the 'true' nature of things nor does it mean recalling indistinctly perceived 'perfect' ideas but is rather a personal and social construction of meaning out of the bewildering arrays of sensations which have no order or structure besides the explanations which we fabricate for them⁷. This means that students use their experiences and feelings through reflection about a given event so as to construct personal and social meaning out of it.

Learning is closely connected to experienced meaning and motivation. Rogers (1969) cited by Bjerknes (2002, p. 7) asserts that the essence of learning is meaning. When such learning takes

⁷ Retrieved from <http://www.exploratorium.edu/ifi/resources/constructivistlearning.html> on 13/03/2012 at 08:50

place the element of meaning to the learner is built into the whole experience. Therefore as Bjerknes suggests, it can be deduced that the essential characteristics of meaningful learning are personal involvement, the learning is self initiated and the learner evaluates it. She knows whether or not it is meeting her needs and whether it leads to what she wants to know or what she wants to be able to know(Bjerknes, 2002, p. 7).

Spady while describing what he calls ‘total learning for total living’ notes that learning is not just absorbing content from written material, rather it is an inherent part of living simply because living is continuously unfolding array of new experiences and inputs; things which have to be assimilated, interpreted and used in some way in order for one to function. He continues to say that whatever one learns becomes a new resource for living, whether one chooses to live the same way or differently(Spady, 2001, p. 30). Spady (2001) argues that in order to prepare students for their total lives after school, teachers should be concerned about developing all aspects of the students’ potential⁸ which he claims to be achievable through five domains for total learning which include: competent learning, creative learning, conscious learning, collaborative learning and constructive learning.

Competent learning is concerned with the development and refinement of a range of functional and productive competences i.e. learning to do useful things and learning to do them well (p.39).

Creative learning is concerned with developing learners’ creative and critical imaginations which help learners to approach every life with expectations that it can be unique and interesting. Students use their imagination in confronting new situations, think and act outside the box of conventions and conformity and they consistently entertain and explore the possibilities that lie beyond the obvious (p.34).

Conscious (Mindful) learning: This is to do with personal growth and identity- a matter of viewing every experience as an opportunity for learning and growth, for enlarging ones’ understanding, for considering new possibilities (p.34). It is about deepening learner’s awareness of the gifts and potentials that lie within themselves and the unique identity that they possess (p.38).

Collaborative learning deals with developing and sustaining personal and cultural relationships that mutually benefit all parties (p.39). It is not a matter of working together to learn only about the content rather it is a matter of working together to learn also about self and about interpersonal relationships.

⁸ This is the capacities to perceive what is happening within and around them, to process it both consciously and subconsciously and to translate that psychological processing into valued action(Spady, 2001, p. 42).

Constructive learning is concerned with making a contribution to human well-being-making the world a better place (p.40) through learning experiences that provide the opportunities for learners to be of service to others as they build their own knowledge, understanding and skills.

While reflecting on the above domains of total learning suggested by Spady it is vital to understand that they cannot be achieved separately or in isolation but instead they involve the whole learning process; that is what learning is all about.

2.3 Methods of teaching and learning

The analysis and discussion of the theories and views about teaching and learning above brings us to yet another issue of methods of teaching and learning. Methods as used in teaching and learning process refer to the strategies, approaches or techniques that teachers employ to enhance their students' learning. There are many methods that different teachers put to use some of which are teacher or content oriented while others can be learner/student centred. It should be noted that no single method is effective all the time for all learners since teaching and learning are complex processes which are influenced by many different factors only some of which are under the teachers' control and none of which are fully understood as observed by Killen (2007) and Dagoon (2003, p. 72). Teachers need to use a variety of methods so as to maximise the learning achievements of the learners and this simply implies use of different ways to help students to learn.

The predominant methods employed in Ugandan VET institutions, however, have been teacher-centred; lecture method for that matter, where the teachers sit or stand in front of the classroom dictating notes coupled with a few explanations and oral demonstrations- (which may be abstract to the learners) without minding about learners understanding and the duty of the students being reduced to sitting behind fixed desks and copying/writing notes that the teacher gives them orally or written on the chalkboard. Students are not usually involved actively in their own learning which may probably hinder their understanding⁹ of the concepts and subject matter being taught. It is imperative to note that teaching in this era of knowledge explosion and expansion is no longer about helping learners to accumulate knowledge that is passed onto them by the teacher rather it is about helping them to make sense of the new information (no matter its source), integrating it with the existing ideas and applying their new understanding in a meaningful and relevant ways (Killen, 2007)).

⁹ The term "*understanding*" in this context is used to mean "making sense of own experiences" and it involves the development of valid connections between new and existing knowledge and experiences (Killen 2007. 8)

This only happens when students are actively involved in their learning by allowing them to learn through acting or practice, self discovery and reflection upon their actions and discoveries in order to make sense or meaning out of their own actions in searching for and creating new knowledge. Students must be mentally and physically active all the time in the learning process. Learning is more effective when learners have opportunity to think reason and debate their understanding. Therefore a teacher has to deliberately create these opportunities by employing appropriate teaching strategies.

As observed by Dagoon, extensive physical activity on the teachers' part will not necessarily guarantee learning on the learners' part(Dagoon, 2003). Dagoon argues that in numerous learning situations, the child learns better if he is engaged in some physical activity while concentrating on the mental task. Therefore they should be brought to the centre of their learning and actively engaged in the activities that enable them to learn what they are taught. This calls for methods that are learner-centred; that encourage learner active participation in the learning process.

2.3.1 Learner centred approaches as applied to teaching and learning

Learner-centred approaches to teaching have emerged from changes in understanding of learning and knowledge creation and more particularly their origin is deeply rooted in the body of learning theory known as constructivism (both cognitive and social constructivism). In broadest terms, constructivist learning is based on the understanding that learners construct knowledge for themselves. The cognitive constructivism is based on Piaget's model which emphasise the interaction of an individual with his environment in the construction of meaningful knowledge. The social constructivism is based on the works of Vigotsky who emphasises the importance of students learning through interactions with the teacher and other students. The principal implication of constructivist understanding of how knowledge is created is that students are the key initiators and architects of their own learning and knowledge creation rather than being passive vessels who receive the transmission of knowledge from expert teachers (Barraket, 2005). Therefore learner-centred teaching strategies emphasise that knowledge is constructed and that teaching should focus on the learner's understanding rather than memorisation of information in form of facts(Killen, 2007).

Gibbs (1995) defines learner-centred learning as a process by which students are given greater autonomy and control over the choice of the subject matter, the pace of learning and the methods used whereas Nanny cited in (Barraket, 2005) defines it as a broad approach that ultimately holds the student responsible for their own educational advances. From these two definitions it can be seen that the focus of teaching in learner centred approaches is on the learner, the relationship

between the student and the teacher and the learning process rather than the teacher and the content.

I also draw some of my understanding of learner-centred approaches to teaching on Weimer's thinking who is concerned with learner-centred teaching as an exercise in changing teaching practice(Weimer, 2002). Weimer identifies learner-centred teaching as comprising five changes in teaching practice which are:

- Balance of class power between the teacher and the student
- Designing content as a means to building knowledge rather than a knowledge end itself
- Positioning a teacher as a facilitator and contributor other than a director and source of knowledge
- Shifting responsibility for learning from teacher to learners and
- Promoting learning through effective assessment.

As seen from Weimer's five changes, making a shift towards learner-centred learning and teaching requires changes in the learning environment, changes in the nature and communication of the learning content and changes in the assessment of learning outcomes. This puts a teacher on a task or in a position of a researcher to find out the best possible ways of bringing about the necessary changes for effective implementation of learner-centred approaches.

Hativa (2000) identifies that learner-centred instructional methods include among others discussion, group work/learning, experiential learning, role playing; problem- based learning and case-method teaching. This implies that there are a variety of options or methods that are learner-centred from which a teacher can choose whenever it is deemed necessary to employ them in her/his teaching. Roy Killen also observes that learner-centred approaches (sometimes called discovery learning, inductive learning or inquiry learning) place a stronger emphasis on learners' role in the learning process. However, this does not mean that all the learning responsibility and power is rendered to the learner. The teacher still has a professional responsibility of guiding the students in their learning process and has to set the learning agenda but of course with much less direct control on what and how learners learn(Killen, 2007). It only means that the teacher is no longer a filter through which all the information to the learner must pass- some of the things that students will learn will come from their individual and group investigations.

Learner-centred approaches and teacher-centred approaches differ in many ways which include; what the teachers does, the way the lessons are organised, how much the learners are engaged actively in the learning activities and how much learners control their learning process, however, in either approach the teacher has a central role as both the planner and a facilitator of learning.

The teacher has to establish the outcomes the learners are to achieve in the learning process and help students to learn. The real difference is on how the teacher structures and mediates the learning (Killen, 2006, p. 73). This kind of learning is supported by Thomas and Noel (2003) where they argue that the reason why teachers teach is to enable learners to learn. Thus, teachers should by all means possible try to facilitate, guide, counsel and to mentor their learners so that they can learn and understand what they learn through methods that will encourage their active learning to take place.

Student engagement through learner centred approaches leads to desirable learning outcomes in a sense that it increases motivation for learning and greater satisfaction with school (Blumberg, 2009). Blumberg (2009) asserts that students in learner centred programmes differ from those in teacher centred learning in such a way that they:

- know why they need to learn the content,
- have a self awareness of their learning abilities and how they can use them to acquire knowledge,
- can use the knowledge they possess to solve their problems,
- have the ability to continue learning throughout their life since they can retrieve and evaluate information they need to learn and
- can communicate and demonstrate their knowledge outside the classroom

I concur with Blumberg in a sense that when students are actively engaged in the learning activities especially through experiential learning and collaborative learning groups, are likely to dialogue and share a good deal of ideas, experiences and perceptions of the subject matter which helps them to learn and understand the content they are dealing with better. Since they will be actively involved in the planning and execution of such activities with the guidance of their teacher and applying what they are learning to solve real life or simulated life experiences they are likely to understand the rationale of what they are studying.

2.3.1.1 Experiential learning

Smith (2001) argues that experiential learning is the term used to describe the type of learning undertaken by students who are given a chance to acquire and apply knowledge, skills and feelings in an immediate and relevant settings. Thus experiential learning according to him involves direct encounter with the phenomena being studied rather than merely thinking about the encounter or only considering the possibility of doing something about it. Houle cited by Smith (2001) explains experiential learning as education that occurs as a direct participation in the events of life. Learning in this case is not necessarily sponsored by some formal education

institutions but by people themselves. This implies that learning not only occur at schools or in a classroom but can result from any situations that an individual encounters in and outside of school. It is thus related to everyday life experiences and experiences in work or education as well as to practical training and doing exercises and experiments (Bjerknes, 2002, p. 8). It is learning that is achieved through a combination of action and reflection¹⁰ upon everyday experiences. Therefore learning by doing is seen as a basis for experiential learning where knowledge is developed in a process of action and reflection(Bjerknes, 2002).

This kind of learning embraces all the three dimensions of learning i.e. cognitive, emotional and social dimension. It should be noted that an individual does not act alone. Most often they act together with others or at least in a social context and it is through the interactions of the individual and his environment (society, people, and learning tasks) that one gets such experiences which yield learning. As the learner thinks and reflects upon his/her actions, he/she puts to use both the cognitive and emotional domains. This implies that teachers who use this method to facilitate learning are able to produce all-round or integrated human being; termed used in the Norwegian core curriculum (Norway, 1997). Experiential learning therefore is a form of learning that is related to different spheres of life which are both personal and professional.

Ausubel and Illeris cited by Bjerknes (2002) argues that all learning starts with experiencing where experience is seen as a subjective awareness of a present situation whose meaning is determined partly by past individual learning. They argue that the most important element in learning is what you know from before. Based on the Roman author Pliny the Elder in 'Naturalis Historia' (A.D. 77) who wrote that 'Experience is the most efficient teacher of all things'¹¹, I perceive experience as an event or a set of events that a person participates in or goes through in life which have consequences in his understanding of those events. According to Pliny experience is a very important aspect in ones' understanding / learning of situations he/she has participated in or undergone in his/her life. This is because participating in such situations brings about concrete sensations about the situation which a person reflects on while trying to construct meaning and understanding of it which eventually yields into learning. This implies that learners should be enabled and encouraged to actively participate in their own learning process so that they can learn from the experiences they encounter during their involvement in the situation at hand.

Dewey (2007) argues that experience is an active-passive affair not primarily cognitive but the measure of the value of an experience lies in the perception of relationships and continuities to

¹⁰ The discernment of the relation between what we try to do and what happens in consequence

¹¹ Obtained from http://www.phrases.org.uk/bulletin_board/21/messages/1178.html on 13/3/2012 at 09: 38

which it leads up. It is only cognitive in the degree in which it is cumulative or amounts. He says that experience, on active hand, is trying-a meaning which is made explicit in the connected term experiment and on the passive hand, it is undergoing. He argues that when we experience something we act upon it, we do something with it, thus we suffer or undergo the consequences. The connection of these two phases of experience (trying and undergoing) measures the value of the experience. Dewey notes that experience as trying involves change but change is meaningless transition unless it is consciously connected with the return wave of consequences which flow from it. He argues that when an activity is continued into the undergoing of consequences, when the change is made by action is reflected back into a change made in us; the mere flux is loaded with significance. To learn from experience is therefore to make backward and forward connections between what we do to things and what we enjoy or suffer from them in consequence. Under such conditions, doing becomes trying; an experiment with the world to find out what it is like and the undergoing become instruction; the discovery of the connections of things.

Based on Dewey's perception of experience it is crucial to focus on the aspect of continuity and interaction between the action and consequence it brings when an experience is to be considered educationally worthwhile. An experience is educationally worthwhile only when it is understood in relation to earlier and future experiences. A single experience should be understood as a constant interaction between the individual and the environment and it is the interaction between the individual's active influence on the environment and the social and substantial influence of the environment on the individual that constitutes an experience (Bjerknes, 2002).

Experiential learning is man's natural learning environment that challenges our limits while producing a feeling of achievement (Bob Webb 2005)¹². It is based on discovery and experience and this inspires students to learn more about the world they live in because discovery is a highly motivating force. Experiential learning does not consider students as gifted or as learning disability due to the fact that each person experience things differently. Experiential learning reflects the perspective of learning as a person's knowledge development rather than knowledge acquisition and therefore focuses a learner as an active subject and learning as a process(Bjerknes, 2002). The basic values underpinning experiential learning are that both the teacher and the learner are subjects in the learning situation and their relationship is characterised by equality and dialogue. Their roles are both symmetrical and asymmetrical as noted by Bjerknes. They are symmetrical in a sense that much as they have different experiences and competences but of equal value and they asymmetrical in a way that the teacher has a professional responsibility, the means

¹² Retrieved from http://www.motivation-tools.com/downloads/how_we_learn.pdf on 16/03/2012 at 14:30

and the power to execute this responsibility which involves ,among other things, the power to evaluate student and set grades upon her work and development.

In the light of all the above it can be understood that in the practice of experiential learning, there is always a link between learning by doing and reflective practice. An experience will be obtained once an action has been undergone and to learn from that experience there is a need to reflect upon it so as to be able to understand it better or even see how it can be done in a different way. Learning through experience thus consists of three elements:

- things (experiences that happen to a person,
- the reflective process that enable the person to learn from experiences and
- the action that result from the new perspectives that are developed through reflection

This can be summarised as experience-reflection-action (ERA) cycle as shown in the figure below

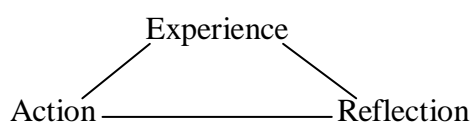


Figure 1.2: ERA cycle of experiential learning

For effective reflective practice the three needs to be seen as a process through which we actively learn otherwise they could remain a series of separate events and may not create anything towards one's learning process.

Practice as an aspect of experiential learning

This is one of the vital aspects of experiential learning. Practice comprises the enactment of the kinds of activities and interactions that constitute an occupation. It is sometimes called praxis to distinguish between theory and practice. It is assumed that practice is enacted through access to and exercise of forms of conceptual, procedural and dispositional knowledge that underpin competent practice. Hung, Ng, Koh, and Lim (2009) refer to practice as an activity of some sort; characteristically an activity that involves an agreed approach to the manipulation of material of one kind or another and in one way or another. Learning through practice is seen as a process that arises through the exercise of the occupational practice and there is no distinction between engaging in practice and learning. Hung et al. (2009) observe that skills that are borne from specific practices are usually learnt and picked up through participation and enculturation in those practices through modelling and apprenticeship, verbal dialogue and instruction and other forms of social behaviour and interactions. Learning is thus acknowledged as being a universal and ongoing activity that is a necessary part of everyday conscious thinking and acting. There is no

privileging of particular settings as sites of learning except through the qualities of activities and interactions because it is what and how individuals construe and construct from their experiences that ultimately shapes what they learn not necessarily what social settings intend them to learn or even press them to learn (Billett, 2010).

Bjerknes (2002) argues that knowledge exists in action not in theory. One learns by doing, discovering, reflecting and by integrating what one has brought about. Students should therefore be given chance to practice what they are taught, to put theory learnt into practice and in doing so they will learn. This is supported by Felder.M and Brent (2003) where they point out that the only way a skill is developed-cooking, critical thinking, writing, technical skills ... is practice. Trying out something, seeing how well or poorly it works, reflecting on how to do it differently, and then try it again to see whether it works better. By allowing students to learn through trial and error i.e. through practice, will go an extra mile in enabling learners to learn from their own failures and achievements. This as is supported by Diana Laufenberg¹³ when she says “The main point is that, if we continue to look at education as if it's about coming to school to get the information and not about experiential learning, empowering student voice and embracing failure, we're missing the mark... learning has to include an amount of failure, because failure is instructional in the process.”

This enables students to make their tacit knowledge explicit since it may be hard for them to communicate it in words. This will not only help learners to learn but will also enable the teacher to evaluate what the learner has learnt in the course of training. Since the most commonly used method of evaluation in Uganda has been written exams, it makes it hard for teachers to tell what the learners really know. This is because learning is judged basing on only the explicit knowledge that students can communicate in words and written materials thus neglecting their inner most-tacit knowledge. Therefore learning by doing can also enable teachers in assessing learners' achievements after a given instruction.

Human cognitive development involves just as much ‘body knowledge’ as it does ‘mind knowledge’ as believed by Chilean, Humberto and Varela cited by (Senge, 2000, p. 37) where they assert that learning is inseparable from action. According to them “All doing is knowing and all knowing is doing.” I strongly concur with these authors because if you want to know something you have to do something and if you know something about a given situation or

¹³ Obtained at Stephen.downes.ca newsletter of January 17, 2011: **Challenges and Failure are Great Tools for Learning**

phenomena, you are able to do something about it. From my experience, most skills that I possess be it cooking, reading, weaving, knitting, teaching name it, was through practicing and doing and now that I know something about them I am able to do anything to improve them or change the way I do them. This is because learning achieved through doing enables a person to get concrete experiences about a given phenomena than when he/she reads or hears about it.

Based on my own experience, the major challenge faced in the training of carpentry trade is too much reliance on the theory than practice which has been a big stumbling block to skill acquisition and development. It is my belief that learning by doing helps greatly in involving the learner in the learning process by giving him/her the chance to practice and learn from the experience he/she will have encountered as he/she does the practice. This will not only yield competent graduates in terms of manual skills but also in critical thinking and self independence which are the basic attributes of any VET graduate as expected by the Society not only in Uganda but also globally.

Reflection as an aspect of experiential learning

Reflective practice is one of the key ways in which we can learn from our experiences in order to develop and understand our practice(Jasper, 2003). It is essentially about taking one's experiences as a starting point for learning. Reflection is a process of reviewing an experience in order to describe, analyse and evaluate it and therefore it informs learning from practice (Reid, 1993). The implication of this is that the process of reflection may lead us to change our perspective of a given situation or to undertake a different action if the situation reoccurs. It should be noted that reflection may not offer us solutions but through it we may learn to understand and clarify situations that would have otherwise remained an obstruction to our learning and professional development. Thus reflection allows us to speculate on how a situation might have been handled differently and to consider what additional knowledge might be helpful.

Reflection is, according to Dewey (2007, p. 75), the discernment of the relation between what we try to do and what happens in consequence. According to Dewey, no experience will have meaning without some element of thought /reflection. This implies that no learning will take place when the experience acquired in the learning process is not reflected upon because it will totally be meaningless and will thus be taken as something that has happened by accident. Reflection involves thinking for an extended period by linking recent experiences to earlier ones, in order to create a more complex and interrelated mental schema(Clark, 2011). This thinking involves looking for commonalities, differences, and interrelations beyond their superficial elements with

the main goal to develop higher order thinking skills. It is about reviewing and evaluating our thoughts, theories, beliefs and assumptions leading to more effective long term learning. By thinking about our experiences in a purposeful way, we can come to understand them differently and take action as a result.

The idea of reflection as a learning process arises from educational theorists like Dewey (1938) who once stated, “we learn by doing and realising what came from what we did”. Here the doing is the experiences in practice and the realising is the reflective process. Dewey thought of reflection as a form of problem solving that chained several ideas together by linking each idea with its predecessor in order to resolve an issue. Reflective practice means that we learn by thinking about things that have happened to us (experiences) and seeing them in a different way which enables us to take some kind of action. It should be noted that it is possible to go through the whole of our life having experiences and not necessarily learning from them or at least not being able to realise that we have learned from them. But the fundamental concept with reflective practice is that we consciously or knowingly consider our experiences in order to draw out our learning. Thus learning from experiences is a deliberate act rather than it happening accidentally.

Kolb’s learning cycle (shown below) illustrates how our learning can benefit from a reflective process where he describes the relationship between thinking and experience. He views experiential learning as a cycle involving action and reflection, theory and practice.

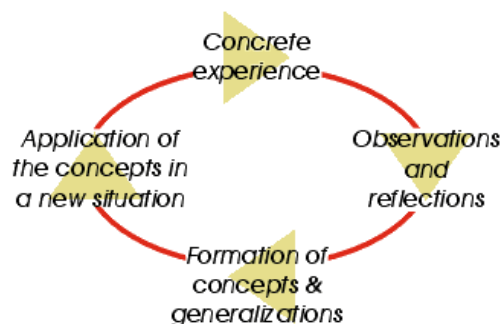


Figure 2.2: Kolb's experiential learning cycle¹⁴

Kolb (1984) basically draws attention to the fact that when we want to learn from something that has already happened to us we need to recall our observations of the events and then reflect upon them in some way. This is only done through reflective processes that demand us to describe the experience and analyse it so that at the end we formulate some ideas or theories about it. As a result we will come to a deeper understanding of what happened and will therefore develop our learning theories or concepts. Kolb argues that once we have these ideas then we frame some

¹⁴ **Source:** Kolb, D. A. (1984). *Experiential learning*

actions as a result and this possible course of action can be seen as our learning which will then inform any action that we take as a result of an experience.

In practice, we rarely stop on one cycle instead when one cycle is completed we consciously take action as result of the reflective processes that we have undertaken. The next time we have another experience, we will encounter it in a different way which implies that the experience has been transformed making it different. So if we go through the cycle again, we are building our knowledge and understanding of it each time which brings about the continuous spiral that incorporates several reflective cycles as shown in the figure below

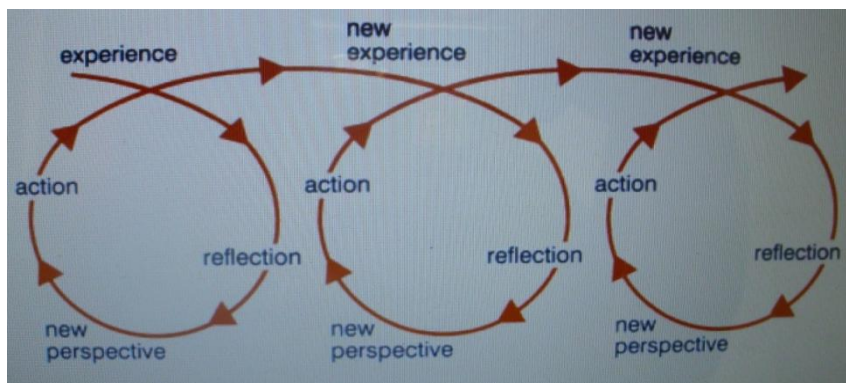


Figure 3.2: The reflective practice cycle¹⁵

This cyclical nature of reflective practice is the key to moving on as learners and practitioners which makes it a process of learning. Learning through reflection thus is not simply a matter of thinking about something that has happened to us as a retrospective activity rather it can be also be a predictive activity; as strategy for planning our learning for future on the basis of what we already know and on what we anticipate(Jasper, 2003). The main purpose here is the desire to come to a deeper understanding about something that has happened to us and to achieve this we need to be open to different ways of looking at our experiences in order to develop as learners/practitioners. Jasper argues that it is only when consider the ways in which we learn best and identify how we know what we know that we can consciously think about how we learn through life(Jasper, 2003).

2.3.1.2 Group work and cooperative learning

Webb¹⁶ refers to group learning as team education and he argues that team education is the most powerful education system in the world. He argues that when three motivated people are debating or discussing about a problem or task at hand, they will learn extremely fast and that they have the power to overcome mountainous barriers regardless of their education background. He asserts that

¹⁵ **Source:** Jasper (2003). Beginning the reflective practice

¹⁶ http://www.motivation-tools.com/downloads/how_we_learn.pdf

People who share knowledge will increase their knowledge while motivating others. People, who only take orders, learn nothing. People, who only give orders, inspire no one (Webb 2005)¹⁷. Therefore it is my submission that it is important for a teacher to allow students to engage in discussions during the learning process because by doing so he/she will have created an environment favourable for students to critically deal with the task on their own which will eventually allow them better understanding of the concepts being studied leading to knowledge creation.

Killen (2006) asserts that if students work together, discuss important concepts and frequently have opportunities to share ideas with others they will learn to value their own efforts and the efforts of their peers (Killen, 2006). Thus the teacher's role while working with group learning is to monitor the students' interactions and intervene to help students learn and interact more skilfully (Johnson & Johnson, 1999). It should be noted, however, that during a productive discussion students will be thinking, offering opinions, developing reasons and justifications for their views and all this takes time and the interactions will be unpredictable thus it may be a little bit difficult to progress as rapidly as it would be possible with lecturing. This implies that a teacher should plan well in advance when he/she intends to use group discussion in the learning process on how the coverage of the content will be ensured which may call for using different kinds of methods.

Cooperative learning is a learner-centred instructional process in which small, intentionally selected groups of three to five students work interdependently on a well-defined learning task. In this study, cooperative learning and group learning are used interchangeably to mean the same thing. It should be noted that cooperative learning is not so much learning to cooperate but rather cooperating to learn. Cooperation means working together to achieve shared goals, so it is an instructional technique in which learners work together in small groups to help one another to achieve a common learning goal¹⁸ (Killen, 2007, p. 191). Students are held accountable individually for their own performance and the instructor serves as a facilitator/consultant in the group-learning process.

Cooperative learning groups are important learning avenues to students as there is empowering of one another in the learning process through group discussions, dialogue and brainstorming as observed by Mjelde where she asserts that students cooperation on working tasks constitutes a real learning resource as they learn from one another (Mjelde, 2006, p. 98). This is reinforced by

¹⁷ Obtained on 16/3/2012 from http://www.motivation-tools.com/windjammer/team_motivation.html

¹⁸ A learning goal is a desired future state of demonstrating competence or mastery of a subject area being studied and the goal structure specifies the nature of the interaction between students and fellow students and also between students and their teacher to achieve that goal (Johnson & Johnson, 1999, p. 3)

Bjerknes who argues that experience is built through interaction between the individual and the environment and is enhanced when an individual acts together with others at least in a social context.(Bjerknes, 2002, p. 8). In this regard a teacher moves away from the traditional understanding of being a dispenser of knowledge but rather acts as a mentor, coach, counsellor or facilitator of the learning process.

In the light of the above, it can be argued that to effectively utilise cooperative groups or group learning in the learning process, requires that individuals remain intellectually open and flexible, confident, generous and humble so as to work together beyond narrow disciplinary or sectional interests. Therefore such groups must possess an ability to generate a meta-way of seeing meaning beyond their individual world-views.

2.3.1.3 Discussion and dialogue in the learning process

Discussion

Discussion is one of the learner centred teaching strategies and involves an orderly process of face-to-face group interaction in which people exchange ideas in order to solve a problem, answer a question, enhance the learners' knowledge and understanding or reach a decision(Killen, 2006). Killen notes that discussion is a versatile teaching and learning strategy that can be used to suit any subject at any level of education and may involve a whole class or can be used with small groups. As with other learner centred strategies it is used to complement other techniques rather than being the sole method of teaching.

Bridges cited in (Killen, 2007) suggests that for an exchange of ideas to be called an academic discussion, it must fulfil five logical criteria: people must talk, listen, respond to one another, they must be collectively putting forward more than one point of view and they must have the intention of developing their understanding or judgement of the issue under discussion. I do agree with Bridges' suggestions in a sense that any discussion intended to bring about learning should endeavour to satisfy the above conditions otherwise it will be useless to be in a discussion where people are not taking/sharing ideas, listening and responding to one another or when the issue under discussion does not allow multiple views that people can bring out through dialogue for the purposes of increasing their understanding of the phenomena under discussion and consequently their learning. This requires that participants in a discussion exhibit certain moral dispositions for example willingness to listen to reason and willingness to abide by the rules that facilitate the exchange of ideas, concern for clarity in the expression of ideas and the concern that various perspectives are considered by the group. It is my submission that while using group discussions, it is vital that participants concentrate on helping each other to reach a better understanding of the

tasks or issues involved other than trying to convince others that their personal ideas are somehow the correct view. Students need to be encouraged to listen actively, accept and value other peoples' ideas and opinions, to base their academic arguments on reasoning other than emotions and feelings and to consider a wide range of options before reaching a conclusion on anything(Killen, 2007).

Killen argues that discussions should engage students in objective, informed and reflective thinking(Killen, 2007, p. 134) and thus suggest that teachers should make those points clear to the learners so that they understand the importance of listening and sharing ideas. Objective thinking involves realising that the subject being discussed has many aspects and thus students need to present ideas and listen to other people's ideas. Informed thinking is concerned with learners being able to know what they know and what they do not know and thus be prepared to admit limitations of their knowledge. Reflective thinkers on the other hand are able to think about the process and outcomes of the discussion and to think about their own learning.

Dialogue

Dialogue is a process of sharing of assumptions or opinions, views, and understanding as a means by which the individuals can learn more about themselves and others so as to achieve a renewed sense of purpose. Dialogue comes from a Greek word 'dialogos' where 'Logos' means 'the word' which could be thought of as 'the meaning of the word' and 'dia' means 'through' and does not mean 'two'(Bohm, 1996). This derivation suggests that dialogue is a stream of meaning flowing among and through us and between us, which will make possible the flow of meaning in the whole group out of which emerge some new understanding (Bohm, 1996, p. 6). In other words dialogue is a free flow of meaning that balances inquiry (asking) and advocacy (telling) in attempt to create a common understanding of the phenomenon.

The purpose of dialogue is to go beyond the understanding held by each member and explore issues creatively from many points of view. This requires that participants in a dialogue suspend their judgements so that deeper levels of listening, synthesis and meaning can evolve. This is supported by Ng(2005a) cited by (Hung et al., 2009) where he argues that when people gather to dialogue they must commit themselves to a set of guidelines which include:

- Voice: they should speak openly, freely and constructively
- Listen: they should pay close attention to others with heart and mind
- Suspend: they should refrain from making quick judgements and keep an open mind.

This implies that a very considerable degree of attention is required to keep track of the subtle implications of one's own assumptive/reactive tendencies while also sensing similar patterns in the group as a whole. Bohm (1996) emphasises that such attention is not a matter of accumulated knowledge or technique nor does it have the goal of correcting what may emerge in the dialogue rather it is of more of the nature of relaxed, non-judgemental curiosity, its primary activity being to see things as freshly and clearly as possible. Thus in a dialogue people share themselves openly and as sensitivity and experience increase a perception of shared meaning emerges. In a dialogue nobody is trying to win an argument thus everybody wins if anybody wins(Bohm, 1996). In other words there is no attempt to gain points or to make one's particular view prevail rather whenever a strong view point or mistake is discovered on the part of anybody, everybody gains and therefore it is a win-win affair. So in a dialogue we are not playing a game against each other but with each other.

People will then find that they are no longer opposing one another nor are they simply interacting, instead they will grow to trust one another in the process. Hung et al. (2009) argue that this increasing trust between the members of the group in a dialogue leads to expression of thoughts and feelings that are usually kept hidden. Thus there will be no imposed consensus nor will there be any attempts to avoid conflicts rather participants will find that they are involved in an ever-changing and developing pool of common meaning(Hung et al., 2009). This will eventually allow a level of insights and creativity that is not generally available to individuals or groups that interact in more traditional ways. The allowance of diversity of views and assumptions enables innovation to flourish and consequently learning.

This disposition to listen deeply to diverse perspectives and rising to intellectual meta-levels of thinking that transcends particular perspectives, yet remaining principled to the diverse views is an increasingly crucial trait for learning environment in the twenty first century. Hung et al. (2009) argues that in this twenty-first century all work will require people to come together and experience conflicts and change in their personal views, beliefs, or behaviour. This demands innovation and learning and the exposure to conflicts and internal contradictions within individuals and group dialogue will provide the leverage for mobilising people to learn in new ways. Such a community of dialoguers will be able to engage in a dynamic conversation that keeps testing old conclusions and coming into new ones; a form of reflection. Lee.V.Ginny and Barnett.G.Bruce (1994) also observe that one powerful form of reflection occurs when educators engage in professional dialogue with each other in small groups. Donald Clark (2011) also appreciates the use of dialogue in enhancing reflective practice where he asserts that carrying on a

dialogue with one or more learners about their work is probably the ultimate in promoting reflection via feedback.

2.3.1.4 Social participation in learning

Learning is a social activity and participation in the social life of the school is central for learning to take place. The way children learn is by internalising the activities, habits, vocabulary and ideas of the communities in which they grow up (Vygotsky, 1978). Thus the establishment of collaborative and cooperative atmosphere is an essential part of school learning (Vosniadou, 2001). Vosniadou argues that learning is primarily a social activity and thus participation in the social life of the school is central for learning to occur. This is supported by O'Connell (7th June, 2006) where she argues that to learn is to engage and develop as a person within and as part of our social framework. She says that ultimately, learning is not just about skills and competencies in isolation, but about skills and competencies within the greater context of our global society.

This implies that learners should be encouraged to interact with the environment in which they learn and amongst themselves so as to be able to learn from one another and from their community. Research (Lave & Wenger, 1991) has shown that social collaboration can boost student achievement, provided that the nature of interactions that is encouraged in the learning process contributes to learning. This is because social activities are interesting in their own way which helps to keep students motivated and involved in their learning tasks. In the teaching learning process this has implications to the teacher as regards the methods of instruction and the organisation of the learning activities and environment in such a way that they allow social participation for the learners while he/she facilitates their learning.

Teachers can assign students work to be worked in groups or can create classroom environments that includes workspaces where resources are shared or even they can create circumstances during the learning process where students are allowed to interact with each other, share ideas and opinions and evaluate each other's arguments. Another important aspect of encouraging social participation and social learning is by linking the school to the entire community. Students should be encouraged to interact with their community either through apprenticeships, industrial training, and school practice or even through excursions, exhibitions and study tours. By doing this, students' chances for social participation are increased.

2.3.1.5 The role of a teacher in the learning process

The teachers' role is regarded as that of supportive structure or scaffold in the learning process, stimulating each learner to reach her zone of proximal development- the distance between the performance a person is capable of his or her own and the performance he or she can obtain in collaboration with a more knowledgeable or skilled person who may be a teacher, instructor, a counsellor or even a colleague(Bjerknes, 2002, p. 15). This means that the teacher's task is to get into contact with the learners' learning abilities and their former experiences or mental structures in order to establish an understanding of their zone of actual and proximal development. It is the responsibility of the teacher to arrange for emergence of such zones or to organise the learning process in such a way that these zones can emerge. This does not however mean that the teacher is an expert who tells the learner what the right solution is, but rather as one in dialogue with the learner to discover possible learning goals and means to reach them.

In learning, as in any endeavour, achieving high quality results requires considerable skill and effort; it is something we should not expect learners to achieve without assistance and guidance(Killen, 2007, p. 5). Cognitive changes do not result from mere accumulation of information but due to processes involved in conceptual re-organisation. Teachers therefore are supposed to act as catalysts for and mediators of this conceptual re-organisation. While it cannot be denied that learners are key constructors of their knowledge and that their understanding occurs when they think and make sense out of their world, teachers should not expect most learners to do it without some help. They cannot be left to make sense out of the world through just their personal observations and thoughts. A teacher need to provide guidance and assistance to the learners as they do so however care must be taken to ensure that the teachers' assistance does not become too prescriptive or else learners will think that they must accept the teachers understanding of everything rather than developing their own understanding.

2.4 Research in education

Bassey 1999 in (Costello, 2003) defines research as a systematic, critical and self- critical enquiry which aims at contributing to the advancement of knowledge and wisdom. It is a way of thinking, critically examining the various aspects of one's professional work, understanding and formulating guiding principles that govern a given procedure and developing and testing new theories for the enhancement of one's practice(Kumar, 2005). It is a habit of questioning what one does and systematically examining the observed information to find answers to the question with a view of instituting appropriate changes for a more effective professional service. Thus research is all about knowledge production, seeking answers to questions through inquiry(Mikkelsen, 2005, p. 139).

Educational research according to Bassey in (Costello, 2003, p. 3) is a critical enquiry aimed at informing educational judgements and decisions in order to improve education action. Ary, Jacobs, and Sorensen (2010, p. 19) look at educational research as the application of scientific approach to the study of educational problems; a way in which people acquire dependable and useful information about educative process with a major goal of discovering general principles or interpretations of behaviour that they can use to explain, predict, and control events in educational situations. Cohen, Manion, Morrison, and Bell (2011) define educational research as the application of principles of science to the problems of teaching and learning within education and to the clarification of issues that have direct or indirect bearing on teaching and learning. This study is thus an educational research in a sense that I am interested in improving my practice as a teacher and facilitator of learning an issue in educational process.

It should be noted that educational research can either be qualitative, quantitative or a mixture of the two or even action research based on the nature of inquiry, nature of the data collected and the mode of presenting the data. Quantitative research according to Ary et al. (2010) is the kind of research that uses objective measurement to gather numerical data that are used to answer questions or test hypotheses and requires well controlled setting. It is an approach to research that stems from a positivism philosophy which believes that general principles govern the social world as they do to the physical world and that through objective procedures researchers can discover these principles and apply them to understand human behaviour.

Qualitative research on the other hand is a kind of research that focuses on understanding social situations from the perspective of human participants in the natural setting. This approach to research sees the individual and his or her environment/world as so interconnected that essentially one has no existence without the other. It looks at social reality as unique and thus researchers can only understand human behaviour by focusing on the meanings that people derive from the events they are involved in. Another form of education research is action research sometimes called participatory action research, individual action research etc according to different authors. This form of research aims at bridging the gap between action and research, theory and practice carried out in collaboration with other people as participants in the inquiry with a major goal of improving the quality of service of solving problems within their context.

It should be noted that however much these categories or forms of research differ in their view about the nature of reality, assumptions about the role of the researcher, the way they define

knowledge and in the use of the results, there is no form of research that is superior to another simply because they are carried out to serve different purposes and thus are vital in their own ways (Ary et al., 2010). In this study I adopted action research approach with a descriptive qualitative research design due to the fact that it allows incorporation of personal reflections and interpretations upon data collected in attempt to derive meaning out of data so as to solve the problem at hand and this is exactly what this research is all about. I will basically concentrate on action research because this study was an action research project and I found it necessary to read more about action research so as to get a deep understanding of the concepts and principles involved.

Action research

Action research is a name given to a particular way of researching one's own learning. It is a practical way of looking at one's own practice in order to check whether it is as one feels it should be. According to McNiff and Jack Whitehead (McNiff & Whitehead, 2005) action research is a common-sense approach to personal and professional development that enables practitioners everywhere to investigate and evaluate their work and to create their own theories of practice. This kind of research can be undertaken by people in any context regardless of their status and position. It involves a person thinking carefully about what he/she is doing and so it can also be called a kind of self-reflective practice (McNiff & Whitehead, 2002, p. 15). Mikkelsen (2005) also observes that action research aims at solving problems in a programme, organisation or community and the focus is on the organisational and community problems/challenges so that the results of such research can be employed to take immediate action, solving problems as quickly as possible.

While traditional research is concerned with researching about other people's lives and speaking about other people as data, in action research researchers enquire into their own lives and speak with other people as colleagues. In doing action research the practitioners always ask questions about their practice like: What am I doing? How can I check that I am doing it well? How can I do it better? How can I together with others learn? In education for example, such questions help practitioners/teachers to systematically investigate what they are doing individually and collectively to ensure that their work is like how they would want it to be. Therefore action research is an enquiry by the self into the self, undertaken in company of other people acting as research participants or critical learning partners (McNiff & Whitehead, 2002). It involves learning in and through action and reflection and therefore it sometimes taken to be synonymous to experiential learning.

Action research is not a thing in itself, it is a term usually used to refer to the process of people interacting with one another with a major goal of solving the problems that affect them in their own practice. Action research is concerned with improving a quality of service. It is carried out to identify areas of concern, develop and test alternatives and experiment with new approaches (Kumar, 2005). Kumar believes that action research is based on the philosophy of community development that seeks the involvement and participation of community members. This is in line with Peter Reason and Bradbury's view of action research as a participatory, democratic process concerned with developing practical knowledge in the pursuit of worthwhile human purposes grounded in participatory world view(Reason & Bradbury, 2006).

It can be seen from these views that the major elements of action research are research, action and participation. Greenwood and Levin (1998) assert that unless the three elements are present the process cease to be action research. Thus action research seeks to bring together action and reflection, theory and practice in participation with others, in pursuit of practical solutions to issues of pressing concern to people and more generally the flourishing of individual persons and their communities(Reason & Bradbury, 2006, p. 1).

Greenwood and Levin (1998) argue that action research is a form of research that generates knowledge claims for the express purpose of taking action to promote social change and social analysis. Therefore action research in their view aims at increasing the ability of the involved community or organisation members (participants) to control their own destinies more effectively and to keep improving their capacity to do so. They assert that action research explicitly rejects the separation between thought and action that underlies most pure applied researches. They believe that valid social knowledge is derived from practical reasoning engaged in through action and therefore argue that action research is the only sensible way of generating and testing knowledge(Greenwood & Levin, 1998, p. 6). In this sense, action research yields results which are concrete in a given context and therefore the knowledge created as a result of such research is likely to be more valid and reliably used by the members of the community in question while dealing with their problems within their community.

The primary purpose of action research is to produce practical knowledge that is useful to people in their everyday conduct of their lives but the wider purpose is to contribute through this practical knowledge to the increased economic, political, psychological and spiritual well being of human persons and communities and to a more equitable and sustainable relationship with the wider ecology of the planet of which we are an intrinsic part(Reason & Bradbury, 2006). It should

therefore be noted that action research is not just about doing activities, rather it is a form of practice that involves data gathering, reflecting on the actions as presented through the data, generating evidence from the data, and making claims on knowledge based on conclusions drawn from validated evidence (McNiff & Whitehead, 2002). So action research is about working towards practical outcomes and also about creating new forms of understanding and knowledge based on validated evidence since action without reflection and understanding is blind just as theory without action is meaningless. Therefore it is a practice of systematic development of knowing and knowledge. Neuman (2000 & 2003) cited in (Mikkelsen, 2005) notes that Action research treats knowledge as a form of power and abolishes the line between research and social action in a sense that those being studied participate in the research process. It is a research that incorporates popular knowledge, seeks to raise awareness and consciousness of the participants involved and is directly tied to political action.

2.5 Summary of chapter two

In this chapter I have documented various theories and concepts from different scholars that I found relevant to the subject under study which I believe have been significant and fundamental in directing me in this research process in an effort to improve my practice as a facilitator of learning. The use of these theories and concepts in this report is dependent upon my understanding, interpretation and reflection upon them as applied in the facilitation of learning process as well as research process. Since this project has been a participatory action research aiming at experimenting learner centred approaches in facilitating learning, I have concentrated on those that are related to teaching and learning and knowledge creation as well as educational research and action research approach in particular.

The guiding theory in this research has been the constructionist theory of learning where knowledge is seen as something created by the learner when he/she is learning. I have engaged with the above theories and concepts so as to guide me to achieve my intention of making a shift from dispensing knowledge to facilitating learning and knowledge creation through an action research approach.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

Diane Todd¹⁹, describes methodology as a method or process researchers use to accomplish a task or compose a theory. Research methodology is thus the procedures used to make systematic observations or otherwise obtain data, evidence or information as part of the research project or study²⁰. The term methodology is used in this report to mean the approach, procedures, strategies and methods employed in a study enquiry in order to answer the research questions.

This chapter thus presents the approach, procedures, techniques, strategies and the methods that were employed during this development study project to collect and analyse data so as to generate evidence from which decisions regarding further actions will be based on. It presents the proposed study plan for the project, the research design and the type of research, the research participants, the methods and tools for data collection and analysis

As a master student of vocational pedagogy whose professional background is rooted in the field of construction disciplines, I found it necessary to study how students in the same field, particularly carpentry students in Uganda, can be well facilitated with the limited resources available in order to acquire the necessary knowledge and skills for their own practice and service in the society. With the desire to improve my practice as a facilitator of learning of construction disciplines and as a teacher researcher, I came up with the guiding question for this study “*How can I improve my practice as a teacher while facilitating the teaching and learning process of teacher trainees of technological studies through learner-centred pedagogical approaches?*” I found this kind of question of ‘How can I improve my practice?’ inspired by Jean McNiff and Jack Whitehead as a way of developing ones’ living theory of practice very fundamental in shaping my understanding as regards my practice as a teacher and my professional development. This kind of question places focus on the practitioner and researcher ‘I’ in the centre of the inquiry as a living contradiction a term used by Jack Whitehead(Whitehead & McNiff, 2006). I am a living contradiction in that I find my values and beliefs of hard work, commitment, democracy and self-reliance among others denied in my earlier learning experiences and practice which has led me to enquire into my practice to find out how I can improve what I am doing so that I can live according to my values.

This study aimed at developing my own understanding of how learners can be well facilitated through experiential learning i.e. learning through actions and reflection in order to increase their own understanding, knowledge and skills in their subject areas. It is also aimed at increasing my

¹⁹ Retrieved on 30th March 2012 from http://www.ehow.com/how_5566016_teach-methodology.html

²⁰ Retrieved on 2nd march 2012 from <http://www.education.com/definition/research-methodology/>

understanding on how they can be mobilised and organised in groups so as to learn from one another in a bid to improve their interpersonal and other social skills that they will need to perform their duties in the world of work. I also intended to work in collaboration with teacher trainees of technological studies with a hidden intention of enticing them to adopt learner-centred approaches later in their own practice as facilitators of learning.

This study being a participatory action research study and having adopted a qualitative descriptive research design, I employed interviews; conversational and open-ended interviews, dialogue and group discussion, documentary analysis and observation; participant observation as methods of data collection. To ensure effective use of these methods I used digital camera, voice recorder, interview guide and open ended questionnaires, reflective logs/field notes and student's evaluation notes as tools of data collection. In regard to data analysis I transcribed and coded data and present it in themes following the objectives of this study. Furthermore the participants of this study included teacher trainees of technological studies, teachers of carpentry and NCDC official who heads the department of BTVET at NCDC²¹.

3.1 Proposed field work plan

The table below shows the work plan that I had proposed to follow during the implementation of this study project 2011-2012.

Period	Planned activity
15 th June 2011- 1 st July	Seeking for acceptance/permission from KyU to carry out the study in the institution
2 nd July 2011- 15 th August	Carrying out situational analysis to ascertain challenges that teachers face in the teaching learning process and other issues concerning VET in general
15 th August- 20 th November 2011	<ul style="list-style-type: none"> • Orientation of the participants to the purpose and research problem • Implementation of the study project
21 th November – 30 th January 2012	Transcribing and recording data
31 st January- June 2012	Report writing, submission of the report and defending the master thesis

Table 2.3: The proposed field work plan

This plan was tentative and thus was subject to change in order to suit the prevailing circumstances/situations in the field and also to suit what the participants needed. I valued

²¹ NCDC stands for National curriculum development centre, a body responsible for curriculum development in Uganda.

incorporating participants' interests and demands in the execution of the study since their readiness and willingness to participate in the study meant a lot to this study. It is of paramount importance that participants are ready and willing to participate because unless it is the case, research may not be undertaken as there would be no source of data or even the participants may not provide valuable data if they are forced to participate. Again since this research was a participatory action research project, it necessitated me to work in collaboration with other people who were to be affected by actions.

It should be noted that I did not commit myself as regards the places that I would carry out the above activities and persons that I would talk to since I was not sure of what may transpire but this does not mean that I did not have suggestions within my mind. I had planned to carry out the process of seeking acceptance between 15th June and 1st July but it never happened as so but instead it was done only in the month of July due to the fact that June was the month when the students of Kyambogo were doing their end of year examinations and thus I could not meet the heads of sections and departments that I intended to discuss with about my intentions as they were too busy with the examinations. Situational analysis was carried out parallel with the implementation of the project due to the fact that the people I wanted to meet and discuss with gave me different timings, from what I had planned, that was appropriate for them to talk and dialogue with me. However I believe that the information that I got from them was vital for this study process and it will be presented in the chapter of findings.

Despite the changes that occurred in respect to the time and activities in order to take care of the situation at hand, the research process proceeded in two phases. The first phase was guided by my desire to understand the challenges that teachers are facing while facilitating the learning process of their students in vocational disciplines and also to dig into issues regarding curriculum development which seem to influence what teachers do in their practice. Thus in this phase I interacted with some teachers of carpentry at Nakawa vocational institute and Kyambogo University and one official at NCDC who heads BTVET in the field of carpentry that highlighted me on ideas and issues concerning curriculum development.

The second phase was directed by the KyU's calendar and was enabled by the willingness and participation of the teacher trainees of technological studies pursuing a diploma in secondary education in the field of technological studies coupled with the permission of the Head of department Civil and Building Engineering and Head of section Technological studies who gave me the opportunity to carry out this research study in the section. In this phase I focused on experimenting learner centred approaches (experiential learning and group learning) to learning of

teacher trainees with the aim to obtain data necessary for answering the research questions and achieving objectives two, three and four of this study(see pages 8&9)

3.2 The type of research and the research design

3.2.1 The type of research

For purpose of this study project a participatory action research approach was employed. This study aimed at improving my practice as teacher in facilitating students learning by trying to change my approach to teaching from teacher centred to learner centred learning. Daniel Selener cited in (Reason & Bradbury, 2001) describes participatory research as a process through which members of an oppressed group or community identify a problem, collect and analyse information and act upon the problem in order to find solutions and promote social and political transformation.

From my own experience as a student in Uganda I felt oppressed by the nature of teaching and learning that I was subjected to which did not allow me to make any choices as regards what I want to learn and how and when to learn it which I think I still the same feeling that learners in Ugandan schools hold. Thus I carried out this study to try to improve the situation by changing my approach to teaching. It is my submission that much as I was interested in improving my practice, this study was participatory in a sense that I worked in collaboration with students who were either directly or indirectly affected by my actions during this study and whose participation made it possible for this study to be carried out.

Action research as described by Jennifer VanBaren²² is an educational research involving collecting data regarding the current educational programs and outcomes, analysing it, developing a plan to improve it, collecting changes after a new plan has been implemented and developing conclusions regarding the improvements. Therefore one of the purposes of action research in education is/can be to improve educational programs in a school. Based on the above definitions and explanation of action research, I find the use of participatory action research approach relevant and appropriate for this study. While I aimed at improving my practice as a teacher, I also had to work in collaboration with other people (students particularly) who were to be affected by the research activities/actions which necessitated me to use a participatory action research approach such that they could be actively involved in the research process.

The main aim of participatory action research according to Robin McTaggart cited in (Reason & Bradbury, 2001) is to change practices, social structures and social media which maintain irrationality, injustice and unsatisfying forms of existence. This study was purposely meant for

²² Retrieved on 11th March 2012 from http://www.ehow.com/list_7608678_types-action-research-design.html

improvement of my practice as a teacher and the learning process of the teacher trainees-the primary participants, through use of learner centred approaches, however, with a hidden intention of enticing teacher trainees to adopt these approaches later in their teaching practice. This necessitated me to engage in action research process to be able to learn from the process so as to use the evidence and learning gained from the process in generating new living theory of practice.

As already noted in chapter two, action research enables practitioners to research into the self in collaboration with others so as to improve their situations and their practice. Kumar (2005) already noted in chapter two argues that action research aims at improving the quality of service since it enables the practitioner- researcher to identify areas of concern, develop and test alternatives and experiment with new approaches. I chose this type of research approach because my major intention in this study was to experiment with approaches, new to me, in teaching and learning to find how well they can help in improving learning outcomes for the students. I consider these approaches new to me much as they may not be new to other teachers because it was my first time to employ them in my teaching practice.

Participatory action research is a recognised form of (relatively open social) experiment that focuses on the effects of the researchers direct actions of practice within a participatory community with the goal of improving the performance quality of the community or an area of concern²³. It is also seen as a reflective process of progressive problem solving led by individuals working with others in teams or as part of a community of practice to improve the way they address issues and solve problems²⁴. While other conventional academic practices and researches study social problems without trying to resolve them, action research goes an extra mile to address issues and offer to try to find solutions to the problems which justifies my choice of the method.

I also found action research living theory put forward by Whitehead and Jean McNiff which is concerned with the question of “how can I improve my practice?” very essential in this research study. In this approach to action research and human existence, the researcher holds his life accountable by producing explanations of his/her educational influences in his/her own learning and in enquiries of such kind (Whitehead & McNiff, 2006). I found this theory as an important tool for assessing the quality of my work as regards significance, originality and rigor. This theory also addresses how action research is carried out and how the quality of one’s work can be judged. The generation of my living theory of practice emerge from the description and explanation of my practice as a facilitator of teacher trainees while using experiential learning and group learning as the research emerged. The theory generated is living since it’s my living theory of practice based

²³ Retrieved on 1st February 2012 from http://en.wikipedia.org/wiki/Participatory_action_research

²⁴ Retrieved on 1st February 2012 from http://en.wikipedia.org/wiki/Action_research

on my current best thinking which also includes yesterday and tomorrow within itself (Whitehead & McNiff, 2006).

3.2.2 The research design

Research design according to Kerlinger (1986) cited in (Kumar, 2005) is a complete plan, structure or strategy of investigation so conceived as to obtain the answers to the research questions or problems and includes what the investigator will do from writing the hypothesis/research questions and their operational implications to the final analysis of data. It can also be defined as a procedural plan that is adopted by the researchers to answer questions validly, objectively, accurately and economically (Kumar, 2005). It is therefore an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with the economy in the procedure as suggested by Selltitz et al 1962 cited in (Kumar, 2005).

In simple terms a research design is a blueprint or detailed plan for how a research is going to be brought to accomplishment including the methods of data collection and data analysis as precisely, accurately, economically as possible with the main aim of reaching the answers to the research questions. Therefore a research design enables a researcher to conceptualise an operational plan to undertake the various procedures and tasks required to complete a study and to ensure that these procedures are adequate to obtain valid, objective and accurate answers to the research questions (Kumar, 2005, p. 84). It is thus a research plan of data collection and analysis.

For purposes of this research, a qualitative descriptive research design was used aiming at studying and learning how experiential learning and group discussion/ cooperative learning can be incorporated and used in the facilitation of learning process of the teacher trainees of technological studies so as to improve their learning outcomes especially in terms of vocational practical skills in their subjects, critical thinking skills, interpersonal or social skills which I believe are good attributes of every good technical/vocational teacher.

I employed a qualitative descriptive research design in participatory action research approach because it freely allows and acknowledges the subjective perceptions of the researcher and the participants (Ary et al., 2010). A descriptive research design is concerned with answering questions such as what, how, which, when and why. I therefore used a descriptive research design to ensure complete description of the situation so that there is minimum/defined bias in the collection of data so as to reduce errors in interpreting the data collected. Human behaviour is always bound to the context in which it occurs and social reality cannot be reduced to variables as it can be for physical reality, thus a research that studies issues that are socially situated must

involve understanding and portraying the meanings and perceptions that are constructed by the participants involved in those particular social settings or events and studying human behaviour was the main issue in this study. This is supported by Judith Bell (1993) where she argues that researchers adopting qualitative perspective are concerned with understanding individual's perceptions of the world; they seek insights rather than statistical analyses. This justifies my choice of the research design in that the data of this study basically takes the form of written descriptions of my own experiences and reflections and those of the participants.

3.3 Participants of this study

The primary participants of this study were teacher trainees of technological studies undertaking a diploma programme in secondary education. I was interested in working with students of Technological studies of KyU because I had been a student in the same section and was aware of the kind of teaching and learning that students are subjected to which, according to my opinion, is characterised by too much emphasis on theory about the subject content and on methods of teaching at the expense of practical work. Yet after training as teachers, these teacher trainees are expected to facilitate other learners in practical subjects. Most of these teacher trainees do not have prior practical training in the courses they undertake and therefore they need to be facilitated practically in their vocations so that they too can be in better position to teach them to their students. I found it of paramount importance to work with these teacher trainees while facilitating their learning using learner centred approaches with the long run aim of enticing them to adopt these methods when they too start teaching.

Other participants were two carpentry teachers at Nakawa vocational training institute and two teaching staff at Kyambogo university in the department of civil and building engineering the same department from where this study project was carried out and one NCDC official that headed the department of BTVET at NCDC. These participants were instrumental in the situational analysis and I find the information obtained from my interaction with them helpful and instrumental for the progress of this research project as it will be presented in the next chapter.

As regards the method of selecting participants (particularly teachers and NCDC official), I did not employ any specific sampling methods instead I only interacted with people that were willing to discuss and dialogue with me about my research as long as they were involved in issues of teaching and learning and educational planning. The same applies to the primary participants (teacher trainees), for there was no specific criterion followed either instead I worked with those ones that were put under my care as their facilitator in the learning process when I got an appointment as a part-time teacher in the section of technological studies. When I met them for

the first time, I informed them about my research and its purpose and I presented my need to collaborate with them in my study and they agreed to participate.

3.4 Methods and tools for data collection

Research methods can be defined as a comprehensive set of approaches to gather evidence and analyse specific problems and thus incorporates techniques and tools: Techniques being practical ways of collecting data and for analysing the information obtained in the research process while tools are the instruments used in the process (Mikkelsen, 2005, p. 139). Ary et al. (2010) assert that while the choice of the method in research depends on the researcher's preference of the method, the suitability of a particular method largely depends on what he/she is studying or what he/she intends to find out. Johnson and Enwuegbuzie (2000) cited in (Ary et al., 2010) argue that what is most crucial in deciding which method to use is the research question where they say that research methods should follow research questions in a way that offers the best chance to obtain useful (and the most thorough) answers. Judith Bell (1993, p. 4) also support this where she asserts that the approach and the methods of data collection selected depend on the nature of the inquiry and the type of information required.

With the above ideas in mind and with the need to carry out a purposeful research, it was of paramount importance that I select and use the best possible data collection tools, techniques and materials so as to obtain valuable data capable of enabling the achievement of the objectives of this research. I basically collected data that matched the intent for this study from various sources using various methods and tools which include: Documentary analysis; books, journals and other written materials in both soft and hard copies and Web documents via internet, interviews; informal conversational and open ended questions, dialogue and group discussions, observations ; majorly participant observation among others which I coupled with my reflections; reflection logs and field notes to generate valuable data for this study. For the purpose of this research project I used the following methods and tools for data collection because I found them convenient and efficient for me at this time.

3.4.1 Documentary analysis

This is the method which (Ary et al., 2010) call examining. Kumar (2005) observes that the review of literature is one of the essential tasks that a researcher does when he/she undertakes a research study so as to acquaint himself or herself with the available body of knowledge within the area of study. This method helps the researcher in initial stages of the research to establish the theoretical roots of the study, clarify ideas and develop methodology and in later stages helps him/her to enhance and consolidate knowledge base and integrate findings with the existing body of knowledge (Kumar, 2005). I have used this method to find out what other scholars have

documented in relation to my problem so to guide my actions, research design and methodology in this study. As already highlighted by Kumar, I found it so important to engage in literatures put down by other scholars in order to enhance my understanding and my repertoire of knowledge so as to have a value base from which to base my arguments, submissions and reflections upon the research actions and observations that I made during this study process. I also used documents like the syllabus and the course description report which entailed the course content which I was to use during teaching and learning process and the aims of the study programme.

In using this method, I have most of the time been interested in investigating the authenticity of the documents and the source of the document that I read so that I get the most authentic and reliable information. I read articles and books that were related to my area of interest but putting into consideration the authenticity of the source, author of such documents among others. I would first find out who wrote them by checking their biography, their academic backgrounds and also check if they wrote with some intentions of advertising or whether they are written for educational purposes. In case of WebPages I would first find out if the author left contacts and then I would write to them to confirm with them. In case of failure to ascertain the authenticity of the document I would immediately discard it from my reading list. In order to avoid a lot of burden of doing all these I have read most books obtained from the school library as I take it that every book brought to the University library are of sound value and from recognised authors.

3.4.2 Interviews

Denscombe (2003) and Patton (2002) cited in (Mikkelsen, 2005, p. 171) assert that an interview is not just an interview. Interviews are questions on experiences and behaviour, on opinions and values, on feelings, on needs, knowledge and background data, they are presupposition questions and neutral questions; simulation questions etc which may address the past, present or future. As put forward by (Kvale & Brinkmann, 2009, p. 2), an interview is literally an inter-view; an interchange of views between two persons conversing about a theme of mutual interest. They maintain that a research interview is based on conversations of daily life and is a professional conversation where knowledge is constructed in the inter-action between the interviewer and the interviewee. Through conversations we get to know other people, learn about their experiences, feelings, attitudes and the world they live in.

A qualitative interview seeks to understand the world from the interviewee's point of view, to unfold the meaning of their experiences, to uncover their lived world prior to scientific explanations (Kvale & Brinkmann, 2009, p. 1). These authors assert that a research interview is nothing mysterious, it's just a conversation that has structure and purpose and thus goes beyond the spontaneous exchange of views in everyday conversations and becomes a careful questioning

and listening approach with the purpose of obtaining thorough tested knowledge. In an interview therefore a researcher asks about and listens to what interviewees themselves tell about their lived world; their dreams, fears and hopes, their views and opinions, their school and work situations, their family and social life among others in their own words. Interviews take different forms and are of varying dimensions but for purposes of this research conversational (informal interviews) and open ended questions were used.

Informal conversational interviews

I chose to use informal conversational interviews with teacher trainees of technological studies due to their nature of flexibility that allows questions to emerge from the immediate context, in the natural setting of the study as pointed out by Patton cited in (Mikkelsen p.171). Since this research was based in the classroom, the nature of the interactions that existed in the teaching and learning process necessitated that questions are not preset or predetermined instead they were left to emerge from the context of the learning process as it unfolded. This eventually increased the salience and relevance of the questions (Patton in Mikkelsen) since they emerged and were built from observation of the situation as it stands and thus are matched to individuals and circumstances.

I used informal conversational interviews to obtain the teacher trainees' experiences and reflections upon the different activities which we engaged in together in class and alone in their group discussions as well as individually. I used answers to such questions to reflect on my actions as a facilitator so as to plan the next course of action. I also used this method at the end of the study to capture the overall experiences, feelings and attitudes of the teacher trainees towards learner centred approaches to teaching and learning which I will be presenting in the next chapter of this report. I also used conversational interviews during situational analysis to get ideas from the teachers I interacted with to find out the current state of affair regarding teaching and learning in VET institutions. I also particularly used this form of interview with the some administrators at the section of technological studies to find out what plans and ideas they have for the improvement of teacher training in the section of technological studies as a whole.

The use of this method was a little bit cumbersome for me to use in that it required high level of attention so as to capture all the responses and writing all the responses as the interview conversation went on was not an easy task for me. However to effectively use this method I in some instances used a voice recorder to supplement my notes.

Open ended questions

Patton(2002) cited by (Mikkelsen, 2005) describes open-ended questions as a type of interview where the exact wording and sequence of questions are determined in advance and all interviewees are asked the same basic questions. In this respect, I administered the kind of questions to the teachers of carpentry of Nakawa Vocational training institutes and Kyambogo University during situational analysis in trying to identify challenges facing VET in Uganda.

The questions used were in a completely open ended format to invite interviewees' explanations, views and perceptions rather than allowing interviewees to answer yes or no. I used open ended questions in order to be able to get various views from different teachers so as to be able to compare the ideas they raised. The challenge with this method is that there is little flexibility in relation to the interview to particular individuals and circumstances as suggested by Patton since the questions are predetermined by the researcher and thus the interviewee has to fit in him/herself. However I found it important for this purpose they were intended to perform as I was interested in knowing and possibly understanding teachers' perspectives and explanation on the challenges that were facing in the teaching and learning process.

3.4.3 Group discussions and dialogue

Dialogue according to Bohm (1996) is a stream of meaning flowing among and through us and between us, which will make possible the flow of meaning in the whole group out of which emerge some new understanding. Thus it is a free flow of meaning that balances inquiry (asking) and advocacy (telling) in one's attempt to bring about a common understanding of a given phenomenon among the group members. Dialogue is a process of sharing of assumptions or opinions, views, and understanding as a means by which the individuals can learn more about themselves and others so as to achieve a renewed sense of purpose. The purpose of dialogue is to go beyond the understanding held by each member. As already mentioned in chapter two of this report, when dealing with dialogue, participants are required to suspend their judgements so that deeper levels of listening, synthesis and meaning can evolve.

Dialogue was important method in this study especially during problem formulation, data collection and validation and report writing. I used this method due to the fact that participatory action research perspective that I employed maintains that problems are not defined by experts but should be based on dialogue (Mikkelsen p. 36-37). This method helped me to understand participants responsibilities, interests, needs, availability for the research process and plans for improvement. In this research, dialogue with participants helped to bring participants' realities close to mine which reduced the possibilities of me becoming a threat to them as participants and

to the whole university due to my opinions and somewhat provocative questions. As encouraged by Mikkelsen action researchers need to create a dialogue with those people who are directly or indirectly affected by the study or intervention which justifies my use of this method. This required me as a researcher to remain flexible in the study design but without losing direction, sensitive to the context of the study and to adjust the approach accordingly, listening to the people's views and knowledge but without thinking that only their voice counts (Mikkelsen, 2005, p. 75). Johnson and Johnson (1999) also maintain that using group dialogue in facilitating learners learning process in a group requires that the teacher/researcher is aware of the group dynamics and thus the success of this method in this study depended on my awareness of group dynamics and the characteristics of good dialogue as mentioned in chapter two of this report.

I have throughout the process of report writing of this study been engaged in group discussions with my learning group members and our mentor professor Johan Houge-Thiis. We have been brainstorming on the possibilities and various ways in which the this work could be improved so that it can bring out clearly the actual learning that resulted from the experiences I encountered during the field study which may sometimes be tacit within me but having great impact on the way this report would be understood. These discussions have helped me to reflect on all the experiences and to increase my understanding of situation as it unfolded during the field study. It is through these group discussions that this project report came to this shape.

During the discussion, I would first describe what I have prepared/written with reasons as to why I have done so and briefly give a description of what transpired on the ground. The group members together with our mentor would then ask questions on areas where the work seems unclear to them. I would then explain according to my own understanding and experiences as obtained in the field. Finally my colleagues and the mentor would give their comments and suggestions based on what they had read in the piece of work that I had sent to them via emails and also on any other issue that could have evolved as a result of my explanation and my answers to the questions raised during the discussion. It is from such comments that I would base my further reflection upon the research process so as to improve what I had documented. The discussions have been majorly more of dialogue and brainstorming and as the norm of our learning group at the end of the discussion session I would give an oral account of my learning as a result of the interaction with the members.

3.4.4 Observation

Observation as a means of collecting data, is the process of gathering open-ended, first hand information by observing people and places at a research site (Creswell, 2008, p. 221). Observation is more than just looking (Cohen et al., 2011); it involves systematic looking and

noting of events, behaviours, settings, people, artefacts and routines. This involves also observing the behaviours of the people being studied as they unfold due to their interaction with the environment. Diane Millar (2008) asserts that observation means using ears and eyes to obtain data about people, events and places. Observation as a method of data collection offers the researcher an opportunity to gather live data from naturally occurring social situations. It allows the investigator to look at what is taking place in situ rather than relying on second hand accounts.

Cohen et al. (2011) observe that since observations allow use of immediate awareness or direct cognition as a principle mode of research, they have a potential of yielding authentic and valid data than would likely be the case with mediated or inferential methods. Because what people do may differ from what they say they do, observation provides a reality check and also enables the researcher to look afresh at everyday behaviour that might otherwise be taken for granted, unexpected or go unnoticed (Cohen et al., 2011). Cohen et al argue that observation can focus on facts like number of students in the class or learning group, the quantity and quality of tools and equipments in the school etc, or on events that happen in the classroom for example the amount of teacher and students talk, the amount of group collaborative work, the amount of off-task conversations among others as well as behaviours or qualities such as the friendliness of a teacher or learners, the degree of aggressive or undesirable behaviour among students, the level of interpersonal relationship among others.

In this study I used this method to observe and monitor how the participants were responding to the different approaches introduced in the learning process, the nature and rate of student interactions while dealing with learning tasks, the amount of collaboration and how they collaborated in their learning tasks while operating in their group discussions, the rate of their concentration on the learning tasks and commitment to their learning activities. My major purpose for using this method was to obtain empirical data from the story of the actions as it unfolded. For purposeful use of this method I employed un-structured participant observation.

Participant observation

I used direct un-structured participant observation due to the fact that this research was participatory in nature that necessitated my involvement at all times. This study took a qualitative design and since qualitative research is context bound and concerned with meaning by studying the behaviour in the natural setting it was paramount that I participate in the research activities and observe whatever transpired so as to be able to derive meaning out of the process of action. This kind of data collection under observation was purposely used to reinforce other methods used and as a way of validating the data gathered through the entire process. Uwe Flick (2006) notes

that the main feature of this method of data collection is that the researcher dives headlong and thus throughout this study period, I interacted with the participants so as to observe all the actions, behaviours and events as they unfolded in the natural setting. While using this method of data collection, both real time and suspended time observations were used. Real time observation refers to where the researcher notes what is observed immediately when it is observed while suspended time observation is where the observer/researcher uses a video camera or audio recorder and looks at or listens to the data after the observation has been made (Millar, 2008).

This method was useful for enabling me to observe events and behaviours that might not be mentioned in the interviews, to gather data on sensitive and unspoken topics as supported by Kawulich (2005) cited in (Cohen et al., 2011). Schecul et al (1999) also cited by (Cohen et al., 2011) assert that this type of observation can help in guiding relationships with the participants and informants, enable the researcher to get the feel of the situation and how matters are organised in the a group or subculture or even to find out about the interactions and relationships and raise questions for further investigation.

It should be noted that this method like any other method of data collection does not go without drawbacks. It is time consuming as requires the investigator to observe the events and behaviours in their natural setting which may not take place in a specified period of time. Another setback of using this method is that a researcher may infer meanings that are not of the observed, a danger particularly present in cross cultural studies. I was aware of such drawbacks of this method and to minimise their effect I used various methods of data collection and communicative form of validating my observation with the participants (students). It is my submission that observation of whatever nature is subject to selectivity of data which is influenced by the observer's values and thus the observer tends to take note of the ideas and issues that are assumed of value to him/her. From my own experiences I was most of the time choosing what to register and what to leave without even realising it since it's sometimes hard for a single person to take note of everything that occurs in a given situation. To reduce this effect I used a digital camera and a voice recorder to bridge the gaps that may result between information noted down during the process of the observation and what actually happened at a particular time.

The challenge I encountered with this method is the limited time that I had with the students because I was meeting them once a week as dictated upon by the time schedule at the University. I only made observation upon events and situations that occurred during the time I was with them in class which may not depict their interactions when they performed practical tasks and in their out of lesson group discussions so as to make valuable judgement in my absence. However, since

the method was not used in isolation, the results are enhanced by the results obtained from using other methods a term known as triangulation of methods.

3.4.5 Photography

I took a number of photos during execution of some activities that students were engaged in to back up my observation of the activities and interactions that were taking place so that I can always refer to them whenever need arises. However, I have not put most of them in this report since I did not get consent from some of the participants to use them for the purpose of this report. This is in line with the ethical values in research as highlighted by Jean McNiff during a workshop on action research that took place on 11th May 2011 at HiOA with MAVP-10 students where she emphasised that it's very necessary that research participants give a written consent to authorise the researcher to use any piece of information be it pictures, voice recordings or even written documents about the participants' views as a sign of respect for them. As for her, it even mandatory to seek permission from the participants to use such tools like video recordings, photographs, voice recording on them while conducting a research. This method has been helpful because it has helped me to keep memories of what transpired during the field work period live in my mind whenever I look at them. They help me to recall every vital aspect that transpired during the field study time.

3.4.6 Tools

The tools that I have used in this study include computer/internet service, digital camera, voice recorder, textbooks and online documents. I used textbooks, journals and online documents in trying to build my understanding of the different approaches that I employed in this study to facilitate students learning process.

3.5 Data analysis

Data analysis is a process of inspecting, cleaning, transforming and modelling data with the goal of highlighting useful information, suggesting conclusions and supporting decision making. This understanding of the concept of data analysis is supported by (Ary et al., 2010) where they assert that data analysis involves reducing and organising data, synthesizing, searching for significant patterns and discovering what is important for the study. Data analysis has many facets and approaches encompassing diverse techniques under a variety of names in different business, science and social science domains. Mikkelsen (2005, p. 181) argues that the main aim of data analysis is to look for meanings and understanding and thus data analysis should go beyond accepting face value. She observes that there are no strict formulas for analysing qualitative data as there are for analysing quantitative data, however, she cautions that it should not be taken that there are no guidelines for analysing qualitative data. As noted by Mikkelsen it is true that there is

no precise point where data collection ends and analysis begins. In my experience in the field I have found that in the process of gathering data some ideas about data analysis and interpretations would emerge and these ideas would form part of my field notes/logs. This overlap of data collection and analysis, however, improves the quality of the data collected and that of analysis as long as the researcher is careful not to allow these initial interpretations to distort additional data collection (Mikkelsen, 2005, p. 181). Since this study was qualitative in nature, I employed qualitative techniques of data analysis thus the process involved transcription of data from the field, validation, coding and categorising, presentation and interpretation based on own reflection and discussion.

3.5.1 Transcription of data

This is the first step in the analysing qualitative data and (Ary et al., 2010) refer to it as familiarising and organising of data. In this step, I logically documented data gathered from group dialogues with students and teachers, from interviews with teachers and the NCDC official, and also from personal logs and field notes following the objectives of this study. This process was very time consuming and hectic for it required me to examine and interpret all the data gathered from the whole process while using different methods of data collection.

3.5.2 Coding and categorising

Mikkelsen (2005, p. 181) argues that a useful way of organising qualitative data for analysis is coding where a researcher organises raw data into conceptual categories and creates themes or concepts that are used to analyse data. Data for this study was coded for analysis following the objectives and research questions of this study. After data collection and transcription, I coded it in themes A and B for research questions and objectives 1 and 2 respectively while theme C combined data gathered in response to research questions and objectives 3 and 4. In some instances these themes were subdivided into subthemes as will be observed in chapter four. This process of coding helped me to identify relevant and appropriate information for this study in a condensed manner but it should be noted that it is disadvantageous in that it reduces the richness of the data garnered in the process since this condensation of data is subjected to the researcher selectivity of ideas which may lead to some information being left out.

3.5.3 Presentation

I present the transcribed data under the main themes A, B and C and subthemes that emerged from the data collected and in some instances direct quoting of participants views is done. Under theme A, I present the data that was collected in response to objective 1 and research question 1 which was related to the challenges that teachers in vocational schools face during the teaching and learning process.

Under theme B, I present the results related to the second objective and the second research question which is concerned with learner centred approaches as applied to teaching and learning process. This theme is further subdivided into subthemes presenting a number of items as presented in the chapter of results. These subthemes are:

- Experiential learning; learning by doing and reflection, documentation of learning through personal notes and logs as well as those of students.
- Group / cooperative learning through discussion and dialogue:

Under theme C, I combine the results for the third and fourth objectives and research questions which concern the challenges that resulted in the use of the learner centred approaches discussed under theme B and the possible solutions that were generated to reduce the challenges that were encountered in the process.

Basically in the presentation of the results of the study I describe the process by documenting what happened, how it happened, why it happened and what learning resulted due to what happened. In presenting all this, I have incorporated direct quotations of the views from the participants however in most cases I have paraphrased the statements in order to improve on the English so that the reader may understand, but I have tried by all means to maintain the original meaning of what was said.

3.5.4 Interpretation and drawing conclusions

The interpretation of the results of the study are based on my own reflections and observations of the situation that I managed to capture during the study period as it unfolded during the study process and my perception of whatever transpired in the study situation. Mikkelsen observes that there are many challenges in the interpretation and drawing conclusions of qualitative data in a sense that there are no absolute rules to govern it except the researcher has to do the very best with his or her intellect to fairly represent the data and communicate what the data reveal given the purpose of the study. Thus it requires that the researcher be closely involved in the process from conceptualisation to the presentation of the results(Mikkelsen, 2005, p. 184). Thus my reflections and interpretations of the results of this study are based on my experiences of the whole research process; based on what I observed, heard and did. The interpretation and discussion of the results is also enhanced by the scholarly views, theories and concepts that I read from various literature sources some of which have been documented in chapter two of this report. This idea of interpreting and theorising based on the findings is supported by Bryman cited in (Mikkelsen, 2005)who argues that the findings of the research acquire significance in the intellectual community only when the researcher has reflected on, interpreted and theorised his or her data.

Thus the researcher should not act as a mere mouthpiece to only report what the subjects of the study said or did in fear that they may not do justice to what they have seen or heard but instead should interpret and theorise their findings or their research work in relation to what they have seen and heard so as to acquire significance and meaning. It is after this interpretation and drawing of conclusions upon the results of this study that I lay down the recommendations and way forward for further learning and research.

3.6 Ethical issues in this action research

Although this action research aimed at improving my practice, it was inevitable that the practice of others especially my learners was to be affected in one way or the other since what I was doing was interlinked with what they were doing. The changes that I was trying to make in my practice could hardly be put into practice without having some knock-on effect on others. Therefore it was important for me to seek for acceptance into the field and participants' consent to participate in the research.

I promised the participants due confidentiality that their views deserved and also to protect their identities throughout this report which I believe I have kept. I tried to make my intentions and actions explicit through dialogues with teachers and teacher trainees. I tried to observe democratic values throughout the process as highlighted in chapter four. This is supported by Winter(1996) cited by (Denscombe, 2007) where he points out that when dealing with action research, the work must remain visible and open to suggestions, permission must be obtained before making observations and that the researcher must accept responsibility for maintaining confidentiality.

3.7 Validity issues in this research study

Validity is ordinarily used to refer to the truth, correctness and strength of a statement or knowledge claim. A valid argument is always sound, well grounded, justifiable, strong and convincing (Kvale & Brinkmann, 2009). Qualitative research has been, in methodological positivist approach to social science where validity became restricted to measurements, taken as invalid due to the fact that it does not result into measurements. However other scholars like Pervin 1984 cited in (Kvale & Brinkmann, 2009) have considered a broader concept of validity as the degree to which a method investigates what it is intended to investigate; the extent to which our observations indeed reflect the phenomena, situation or variables of the interest to us and this broad conception of validity has led to the acceptance of qualitative research as also a means of arriving to valid knowledge claims. As argued by Cronbach 1971 cited in (Kvale & Brinkmann, 2009), to validate is to investigate and thus looks at validation as being more than just corroboration but rather as a process for developing sounder interpretations of the observations.

For the purpose of this research two forms of validation were used i.e. communicative validity through use of action reflection cycles and triangulation of methods.

3.7.1 Communicative validity through use of action reflective cycles

Communicative validity involves testing the validity of the knowledge claim in a conversation or dialogue. This is what Mikkelsen calls continuous analysis and reporting (Mikkelsen, 2005, p. 97) As noted by (Kvale & Brinkmann, 2009), valid knowledge or observation is constituted or decided when conflicting knowledge claims, interpretations and action possibilities are discussed and negotiated in a conversation, through argumentations of the participants (members of the community) in a discourse; a form of argumentation where no social exertion of power takes place and the only form of power is the force of better argumentation.

Throughout this study I kept my personal logs of what I did, observed or heard, what my students did and said and my reflections about them, my interpretations of my experiences and reflections upon my observations as made during the learning process to the participants (students) which I communicated to my students on regular basis to ascertain whether they agree with my interpretations and reflections or not and whenever a disagreement would arise then a correction would be made in light of their evaluation which would consequently help me to improve what I was doing. This was to ensure that their situation as observed by me was not misinterpreted. This is supported by Mikkelsen (Mikkelsen, 2005) where she argues that continuous analysis and reporting ensures that gaps in data, surprising perspectives worth pursuing are discovered at early stages of the study.

Because action research living theory requires a person to generate his or her own explanations of his or her influences on his or her own learning, the learning of others and in the social learning for social transformation, it was important that each participant in this study takes note of his or her own experiences and reflect on them so as to be aware of his or her own influences. From my experience it was evident that students participated in different activities but it was unusual for them to sit and reflect on their learning which made it hard for them to write/keep logs however much they would be in position to tell what they have learnt orally. Log writing being a new phenomenon to them it was not surprising that these students found it challenging to write and use logs in assessing their own learning process. This consequently made it hard for me to improve my logs in light of theirs. Again some students could shy away when it comes to giving feedback and this could be attributed to the nature of the teaching that they were accustomed to where they considered me as a teacher to know everything that I was doing.

Despite the above challenges associated with this method I found it a very helpful method of validation of research work as it puts the researcher in a better position to identify data gaps and other unexpected surprises at early stages which would be used in planning of the next action. The only challenge with this method is the reliance on participants' capacity to document and reflect on their own learning and give feedback.

3.7.2 Triangulation of methods

Apart from using communicative validity, I also employed methodological triangulation, a concept perceived as the use of different methods to obtain views on the same object of the study. This concept is supported by Diane Millar where she suggests that it is better for action researchers not to rely on only one source of information or on one method of data collection or on one tool of data collection tool (Millar, 2008). She argues that research is stronger if the information is collected in many ways and that triangulation helps in providing more meaningful data analysis. Mikkelsen (Mikkelsen, 2005, pp. 96-97) identifies at least five types of triangulation which include: data triangulation, theory triangulation, investigator triangulation, discipline triangulation and methodological triangulation. Methodological triangulation which involves 'within method' triangulation; same method used on different occasions and 'between methods' triangulation where different methods are used in relation to the same object of study was used.

For purpose of this study I used different methods which include unstructured participant observation, conversational interviews, discussion and dialogue, photography and document analysis and also different data collection tools which include field notes/logs, camera and audio recorder with an intention that each method or tool supplements the results obtained using the other. It should be noted however that during situational analysis, it was not possible to use various methods; the most used method was conversational interviews due to the fact that my interviewees could not afford to give me more opportunity to meet and discuss with them again a situation that could be attributed to the busy schedules of their work situations.

3.8 Summary of chapter three

This study was carried out to experiment some learner centred strategies in the teaching learning process of the teacher trainees of technological studies at Kyambogo University with an aim of creating and developing my understanding on how best experiential learning and group learning can be employed in facilitating learning process of the students. The proposed work plan was bound to change to take into account the changes in the situation in the field and interests of the participants. The participants in the study were mainly four year one and three year two teacher trainees of technological studies pursuing a diploma programme in secondary education (DES). Other participants included four teachers of vocational subjects of which some of them were

administrators and one official at NCDC who headed the BTVET department. With the desire to improve my practice in facilitating learning process, I found it vital to collaborate with students who are affected by the problem under investigation and thus I employed participatory action research approach since it allowed me to work in collaboration with teacher trainees at Kyambogo University in jointly tackling the problem. I employed a qualitative research design due to its flexibility that allows studying human interactions in their natural setting so as to derive meaning and explanations from their way of behaviour.

I adopted interviews; conversational interviews and non structured questions, unstructured participant observation, documentary analysis, photography and discussion and dialogue as methods of data collection. The use of informal conversational interviews and dialogue with the teacher trainees was fundamental in obtaining their perception and experiences with the learner centred approaches that we had adopted in the learning process and the challenges that they encountered so as to devise possible solutions. The open ended and unstructured questions were, however, used during interviews with teachers and NCDC official since I could not get enough time to allow questions to emerge from the context of the interview. Unstructured participant observation was employed to observe the nature of the interactions that existed among students during group learning, their reaction to different tasks and the rate of their participation in the learning activities.

The use of documentary analysis was adopted from the beginning of this study to enhance my understanding of the problem under study i.e. focusing of the study, my understanding of the theories and concepts related to teaching and learning and research methodology especially action research and qualitative research. Throughout this study I kept a reflection log detailing my reflections upon my experiences which were as a result of my actions, my observations of the situation and events and also as a result of my interactions with the teacher trainees.

In order to make proper use of the above methods I used digital camera, voice recorder, field notes and logs as tools for data collection. On data analysis, I transcribed and coded data in themes based on the research questions and objectives of the study so as to categorise them for proper presentation and interpretation. The interpretation and drawing of conclusions was based on my own reflections upon my experiences of the whole research process and was enhanced by incorporating the scholarly views and arguments and theories in the analysis of the results. Validity of the results obtained in this study was ensured through communicative validation through use of reflective cycles and dialogue with the participants of the study and also by use of triangulation of methods.

CHAPTER FOUR: THE STORY OF ACTIONS AND THE LEARNING PROCESS

4.0 Overview

In this chapter I present, describe and interpret the story of actions which show the situation as it unfolded, my research experiences and the learning that I have acquired from the research process. I present and describe data that I have thought as relevant to the application and experimentation of learner centred approaches to teaching and learning of teacher trainees of technological studies and how these approaches can later influence learning in VET institutions in Uganda. This study was carried out with the major aim of creating own understanding of how learner centred approaches to teaching and learning; experiential learning and cooperative group learning, can be effectively employed and sustained as methods of teaching of vocational construction disciplines while facilitating students learning process. The major participants in this study were the teacher trainees of technological studies at Kyambogo University and thus the information that will be presented here will basically be related to their learning process.

This research being qualitative in nature, data description and interpretation is based on my own reflection and perception of what I observed as a researcher and as a principal participant in this study and upon what was done and what transpired during the course of the research. Data for this study include results from my own observations, students' responses and reflections upon the whole process, and also incorporating views from other participants that I interacted with during this study which I find very crucial in my understanding the whole situation and process of this study.

The description is in a narrative form stating what was done, how it was done and why it was done the way it was done as well as the learning process that took place as a result of what was done. In this chapter I present the activities done including the process of acquiring acceptance into the field, the situational analysis, the actual implementation of the learner centred approaches which is subdivided into two parts: experiential learning and group learning as well as the learning acquired in the process. The presentation of the results of this research sequentially follow the objectives of this study as reflected in chapter one of this report which are:

- To find out the state of art as regards teaching and learning in VET institutions focusing mainly on the challenges that teachers face in the teaching and learning process.
- To develop an understanding of how learner-centred approaches: cooperative group learning and experiential learning can be effectively and sustainably employed in facilitating students learning process.

- Ascertain the possible challenges in the use of the above mentioned learner centred approaches in the teaching learning process
- Develop possible solutions to the challenges faced in the use of learner centred approaches mentioned above in the teaching learning process.

4.1 The process of acquiring the acceptance into field

Much as this part is not catered for in the objectives of the study, I find it necessary to be presented in the story of my actions of this study since it greatly impacted on what was done in this process of study. This process was not a simple one as someone would imagine. In my end of year one report I had indicated my intentions to work with Kyambogo University since it was my mother institution and again my experiences regarding teaching and learning particularly with teacher training were linked to Kyambogo University. So when I reached in Uganda, the first thing that I did was to fix an appointment with the head of section technical teacher education of KyU Mr. Ali Kyakulumbye who had previously showed interest in my study when we talked on phone before I left Norway for Uganda and I finally met him on 25th of June 2011. I presented my intention/purpose of the study and my need to work with the teacher trainees at the section. The meeting did not yield positive results, he instead told me to try out other places like Nakawa Vocational Training institute and Lugogo Vocational training centre which never became possible for me since the schools had closed for their holidays. He at the end of this meeting asked me for my proposal so that he could read it and give me advice. I sent the proposal but up to now I have never heard from him. On that same day I also met the head of section technological studies at KyU, whom I had previously collaborated with during the anchoring process²⁵ and briefly discussed with him about my intentions and ideas for the study. He told me that he could not promise anything but he asked me to send him my proposal so that he can read through it and communicate back and I did what he had asked me to do.

While I waited for communication from the head of section of technological studies, KyU advertised for part-time lecturers (mid July 2011) which I saw as an opportunity to enter into KyU system. I sent in my application and fortunately I was given a teaching position at the department of civil and building engineering in the section of technological studies where I too had studied from (A copy of appointment letter can be seen in the appendices). The opportunity to teach at the section of technological studies met my long term desire to make changes in the way teaching and learning was carried out at that section which I had experienced myself. I was assigned the duty to

²⁵ The process intended to create links and collaboration with the people in my home institution in Uganda for purpose of laying ground for the implementation of the development research project. More details can be obtained from my end of first year report “*The needed improvements in the professional technical vocational practice of Formal VET-Carpentry in Uganda*”.

teach wood working and Technical education methods to year one and year two DES students respectively. These classes comprised four students and three students respectively and I met them two hours per week per class. In this process also I made contacts with different teachers from different institutions but I only managed to link up with teachers of Nakawa Vocational institute who accepted to participate in this research by giving their valuable time and views as will be presented in this chapter. To have a balanced view of the situation I also thought that it important to hear from curriculum developers who in one way or the other influence what is done in VET schools. I made an appointment with one of the officials at NCDC (the head of BTVET) whom I was directed to at my first visit at NCDC offices and I met him on 30th January 2012.

I carried out this process to ensure that ethical values involved in action research are catered for. This is supported by McNiff and Whitehead (2005) where they assert that an action researcher must ensure that he/she gets permission and authorisation to carry out the research and also the good will of others that are to be involved in the research process. It is the success I achieved in this process that lead to the actual start of the implementation of the study.

4.2 The first meeting with the students (Wednesday, 24th August 2011)

When I first met the students, I introduced myself to them and informed them that I am their teacher for the courses I was assigned but at the same time a research student. It should be noted that my meeting with the teacher trainees was at different times (hours) but on the same day so that is the reason why I am only indicating the same date. After introducing myself, I also asked them of their names, their brief education and family backgrounds and their expectations of the course and what they expect of me as their teacher. It was obvious that different students had different expectations and backgrounds but what was common was that they were all from academic upper secondary (A' level) and therefore they had had no prior knowledge and training in Vocational skills training. Thus, they expected me to help them to acquire knowledge and practical skills in the subjects I was to teach them. I informed them, however, that whatever they will learn will depend on their commitment, participation and engagement with the learning tasks. I promised that I will always be there to assist them in their learning process as their facilitator whenever need arises.

During this meeting, I also presented my expectations of them some of which was their commitment, cooperation, active participation in learning activities, personal responsibility and being open to me since I could not know what help or assistance they needed unless they communicated. I further explained the purpose of my research and sought for their participation which they willingly offered. I told them how I intended to work with them while trying out learner centred approaches; group learning and experiential learning. Group learning was not hard

for them to understand but what seemed troublesome for them was experiential learning. Using my knowledge and understanding about experiential learning coupled with my experiences gained during this master programme, I tried to explain what experiential learning is all about and how I intend to implement it with them together with group learning which I hope shed some light in their minds. I expected, however, much learning and understanding about the concepts to be achieved later throughout the implementation process (details can be seen under theme B of this chapter). We briefly discussed how we are to operate in groups and by the end of the meeting students decided that they would be in one group since the number in each class was already small which I found justifiable. So in the consecutive lessons we worked in those groups.

4.3 A: The state of affair in VET institutions; the challenges that teachers face during the teaching and learning process.

Under this theme I present and interpret data that I thought and considered vital and relevant in relation to the issues concerning the current state of affair of teaching and learning where I basically focussed on the challenges that teachers face in their practice which impact on the teaching and learning process in different vocational institutions. From the initial stages of this study I carried out situational analysis where I interacted with a number of teachers who willingly gave me their views about their experiences as teachers in vocational institutions in Uganda. This was done to enhance my knowledge about the current state of affair as regards teaching and learning in VET institutions so as to enrich/contextualise my problem statement which was the basis and guiding principle of my study. I also interacted with an official from NCDC; an organisation responsible for designing of curriculum in Uganda, who happened to be a head of BTVET in that organisation. In my interaction with him, he highlighted briefly on the issues that concern curriculum development and the challenges they encounter in their work as curriculum developers and the plans they have for future implementation. Much as curriculum development is not directly concerned with teaching and learning, it impacts greatly on what is done in the schools, in the learning process and thus I found it very essential to put an ear in such issues.

During this phase, I employed both informal conversational interviews and open ended questions which I had prepared in advance to dig out some information that I thought was relevant for my study a copy of which can be found in the appendices. The questions were sought to find out teachers and students experiences regarding the challenges they encounter in the process of teaching and learning and the interview guide was meant to direct my interaction with NCDC official so as to get information concerning curriculum development and implementation.

Since I was to work with teacher trainees of technological studies (a section in the department of Civil and Building engineering) and having spent some good time outside Kyambogo, I found it

important to get views and ideas concerning the current state of teacher training that was going on in this section. In order to accomplish that, I dialogued with the head of the department already mentioned above on issues related to nature of teacher training programme in this department. In our interaction he highlighted the need for improving the nature of teacher training done at this department. In his own words he said, "... I think it would be more appropriate if this training is given to people who already have skills in different Vocations like water engineering, carpentry...because they already have the skills and what they need is to train in the teaching methods which they can employ to teach those skills in their trades," He added, "this is even what BTVET has been agitating for". When I inquired about the issue of A' level entrants who join with no prior skill training he said, " An alternative for those students could be giving them skill training first for at least one or two years depending on the level and then train them the teaching methodology afterwards".

I found his argument in line with mine that I had documented about in the previous studies of project 1, 2 and 3 where I was arguing that somebody can never teach what he does not have adequate skills in. VET is all about skill acquisition and development and therefore a person can never be expected to impart skills to other people when he/she does not have any. I therefore found it very important that programme designers of this particular teacher training course of technological studies with education to revisit and redesign it so as to take into considerations of such issues. In our dialogue we found out, however, that the challenge here could be financial constraints in a sense that most parents may not be in position to pay Tuition for their children for all that time due to prolonged programme of study to encompass skill training. He also pointed out that some students have been complaining that they spend a lot of time to finish this programme especially those at bachelor's level and his fear was that in case it is prolonged they may end up rioting. It is my observation that this issue need to be thought of very systematically by various people concerned, it's not a one man's effort that can change the situation nor is it a teachers' role to effect any change but rather requires the intervention of all stakeholders in the system including the university administrators, teachers, student body and even the government at large.

Technological studies as a programme of study comprise two options at all levels i.e. construction and manufacturing. When a person takes up construction option for example he/she has to study about all trades that lie under construction such as carpentry normally called woodworking, building construction, surveying, Architectural drawing, structural analysis and many others with no specialisation in any of the areas which in my view may be a challenge to adequate skill acquisition and mastery since you have to tackle a lot with no adequate concentration on any of them due to the limited time available for that programme. I found it a challenge myself when I

was a student at the section, and thus I thought that this chance to work with the same section was one way of enabling me to express it to the concerned people who may not have realised it to see what they had to offer on that issue. I discussed with one of the administrators at the section of technological studies who happened to be one of the designers of this programme where I highlighted the need for rethinking about the possibility of restructuring the programme such that it incorporates the element of specialisation so as to enable students to enhance their skills in at least one field. He seemed to have seen some sense in my idea but he said that it may not be possible due to the fact that there are not enough teachers to handle those specific trades under construction. I did not agree with him on that argument because the same teachers who teach students when the courses are combined can still teach them when they have specialised trades. From my own observation, it is not lack of teachers that makes it hard to be done but it's just lack of willingness and courage to undertake such a change. This unwillingness to change was evident in his statement when he said "You people are mistaken. Those ideas work best in European setting but not here in Uganda. Tell me; can carpentry for example be taught at Bachelors level and what name can it be given? Can we call it Bachelor of carpentry?..." he laughed, "I think some of the ideas you learn will not work here?" From such statement it can be seen that there was no readiness to accept and try changes in the system. This kind of attitude is not only held by administrators at Kyambogo but it appears to be a general problem in most institutions that deal with educational issues. People tend to reject ideas even before giving them a second thought which has probably caused our VET to be stagnated.

When I realised that I was not going to be successful with that idea, I dropped the argument and took another line. I introduced him to the idea of using experiential learning through learning by doing and reflection. Being my immediate supervisor I found it vital to make him understand what I intended to work on with the students. I also wanted to initiate him in the study so that he could also participate in the study since he too was a teacher of wood work in the same section. He told me that it seemed to be very helpful in skill acquisition and he would have participated only if he was not busy with office work. He gave me a go ahead to try it out with the students but he highlighted the challenge as being lack of adequate tools and equipment. He said that lack of adequate tools and other materials to use for practice would make the use of this method difficult. In his own words he said, "I very much want to teach my students practically but I find my hands folded due to lack of tools, timber and machinery for my students to use". From my experience as a result of this interaction, it's my observation that much as lack of tools and equipments is one of the major drawbacks to effective learning through practice, he himself was not willing to change his perception of teaching and learning. He never wanted to be very open or to be impolite to tell me that he was not interested in participating in this study instead he used excuses that would

exonerate him; in other words he never wanted to take responsibility of whatever would transpire in the process of the study.

In this phase of situational analysis I also administered open ended questions to practicing teachers at Kyambogo and Nakawa and as already mentioned above these questions sought to find out the challenges that teachers face in the process of teaching and learning. This was specifically intended to get answers for the first objective of this study. From the findings it is evident that there are very many challenges that teachers face as facilitators of learning which impact a lot on the development and improvement of their own practice as teachers and also on the learning process of their students which consequently affects the technical professional practice of Carpentry as a field of study as a whole. After thorough study of the responses from the teachers, I found out most challenges were cutting across for all teachers irrespective of the institutions they were serving in and are thus presented here below.

4.3.1 Lack of adequate tools, equipment and materials

The responses from teachers revealed that the most challenging situation in their practice as teachers of carpentry is lack of enough tools and materials which renders teaching and learning of practical skills a little bit hard. In some institutions where materials and tools exist, they are not enough for all students that they have at a particular time. It is also from my experience that in some institutions like Kyambogo University most of the machines and tools that are present are either outdated or are not good working conditions. This lack of adequate tools and materials could be one of the reasons why some teachers may end up teaching practical subjects theoretically. The suggestions put down by these teachers to meet this challenge were:

- The government should give subsidies on importation of machinery for use in schools or reduce taxes on importation of machinery and other scholarly materials for VET institutions
- Government should increase funding to VET institutions to enable them to purchase adequate materials and tools
- The government should provide schools with the necessary working tools and machines

4.3.2 Lack of avenues for professional development

From the teachers' responses, it was evident that one of the challenges that teachers meet is lack of training/educational programmes to enhance their skills and knowledge. It is my submission that this challenge has a great impact on the teaching and learning process because the effectiveness of the teachers in the learning process greatly depends on his knowledge, skills and understanding of the subject matter and pedagogical approaches. Teachers revealed that even

when there are opportunities for joining institutions of higher learning; it is sometimes very expensive for them in terms of tuition since they also struggle to make ends meet for their own families. One of the teachers said *“it is very hard for me to go for further studies because I have a family which I have look after and when I go for studies it means I have to leave the job. How can I provide for my family needs when I do not have a job?”*

It is my observation that lack of such opportunities for professional development probably makes teachers to lag behind in terms of current technology, skills, and knowledge. Since knowledge is advancing day and night teachers too need to advance and improve their own knowledge in their fields. Teachers suggested that the government should introduce up grading educational programmes for those already in service so that they can improve on the skills that they already have so as to meet the current trends in carpentry. I have also a belief that the government can help these teachers to upgrade in their studies by granting them study-leave with pay so that they can have some financial support to cater for their family once they are for studies, however, this may prove to be hard for those teachers that are serving in privately owned institutions.

4.3.3 The negative attitude accorded to VET-carpentry by the society

Another challenge which teachers mentioned was the negative attitude exhibited by the public towards vocational education. Most people still consider vocational education as a type of education for academically weak people and also for those who are from humble families that cannot afford to pay for elegant courses. This attitude as revealed by teachers impact negatively on their practice as teachers in that the kind of students who come for vocational courses are academically weak and even most of them are not interested in studies which makes teachers work a little bit tiresome because they have to spend most of the time career guiding the students with optimism that they will develop interest in their studies which may not necessarily be the case.

One of the teachers mentioned that this negative attitude towards has been accelerated by the fact that the government does not give it much attention as regards financing it and even that during selection of students those who pass well are taken to academic schools giving vocational institutions ‘residues’. This kind of stigma does not only affect the number of students that join VET institutions but also the esteem of those that join them which consequently affects their motivation towards learning. Some of the solutions that were suggested by teachers to meet these challenges are:

- Registering all practicing carpenters and issuing them with work permits so as to motivate them, to make them feel valued which may reduce on the challenge of low attitude

- Sensitisation programmes should be run on regular basis so that the public can know the benefits of VET with an aim to reduce the negative attitude
- Reviewing the technical education policy and BTVET policy
- Students should be given career guidance so that they can have a positive attitude change towards VET and carpentry in general.
- Teaching students practically can help them to improve their attitude towards vocational education in that when they produce tangible things they will feel that they are important in the society.
- Training in skills should be given priority so that students can easily create their own jobs which will eventually motivate them to learn
- Involving students in practice of real work as they progress in studies,
- Practical skills and field studies enhanced by theoretical approach should be incorporated in the learning process

From these suggestions it can be seen that teachers observe the need to involve the learner in the learning process through practice. This kind of response enhanced my purpose for this study which was to increase learner participation in the learning process through use of learner centred approaches.

4.3.4 Poor staff welfare

From the issues raised by the teachers, it was evident that there was a challenge of poor welfare which culminates from the fact that they are not well paid. This issue was raised on the question that required them to state the general challenges that they meet in their practice. The answers given were:

- Disappointing and de-motivating salaries
- Limited chances of joining government payrolls
- Lack of staff houses
- Low payments
- Workload in not proportional to the salary paid
- Inadequate employment policy etc

From such responses it can be deduced that teacher's poor welfare was seen as one of the challenges. This is even worsened by the current high inflation rate in Uganda that has made most utilities very expensive and thus teachers find it very hard to meet their ever increasing family needs which probably hinder their effective service at school. As it is always said 'a hungry man is an angry man', teachers cannot perform their duties effectively at school when their families are

crumbling thus affecting the effectiveness of schools which consequently affects learning. Teachers thus suggested that in order to raise their welfare, Government and private employers should increase salaries for teachers in vocational schools so that they too can fit in their environment like any other professionals.

While it cannot be denied that the government should increase teachers' salaries and other benefits to improve their welfare, it is my suggestion that teachers too can do something by themselves to try to improve their welfare on their own. Since VET is all about skills acquisition and application in day to day activities, it is my submission that VET teachers can use their skills to produce items that they can sell and get money even when they are at school. They can use school workshops to produce items that can be sold for money which they can use to improve their welfare at school and in their own homes. This view is supported by one teacher at Nakawa who revealed that he had his own woodwork workshop where he does his business besides teaching. He actually said that his practice in this workshop helps him to upgrade his skills since he gets different tenders from different people that sometimes necessitate him to read and research further so as to meet the customers' demands.

4.3.5 Outdated curriculum

Teachers' responses revealed that the curriculum which they follow when teaching lacks regular updating which makes it unable to meet the current labour market requirements. This situation is worsened by the fact that teachers are not involved in the formulation/design of the curricular that they employ in the teaching and learning process. The failure to collaborate with teachers in curriculum development as revealed by teachers responses makes some important aspects necessary for study and other interests to be left out which may in one way or the other affect their practice at school. In the interview with the official from NCDC, the officer confirmed that the curriculum has taken long without updating.

This was revealed when I inquired from this him how often the curriculum is revised. He said in his own words, “. Hmm, this is a big problem in Uganda, the curriculum is supposed to be dynamic and changing, but ours in not all that dynamic but we are trying to implement it now, that's why we have been out these days trying to carry out research on the current trends and needs”. However he said that whenever a curriculum is to be made they always invite business companies, school representatives, ministry representatives among others. It is my submission however that in most cases the representatives from schools are usually administrators who may not have much to do with teaching and learning and thus may not represent the interest and needs for teachers who are directly involved in the learning process. This issue is a challenge in most VET institutions except in schools like Nakawa Vocational institute and Kyambogo University

which designs and updates its own curriculum depending on the prevailing circumstances. In order to make our curriculum relevant to the current and future needs of the society it is imperative that it is revised from time to time so as to cater

4.3.6 Lack of proper links with the labour market

From the responses from teachers, it was evident that teachers hardly have links with the labour market. This lack of close link with labour market makes it hard for teachers to know the labour market requirements and thus what they teach in schools may not match what is required by the labour market which may also results into diverse consequences. The only link that exist between schools and labour market as indicated by most teachers is the industrial training or school practice in case of teacher trainees that students get at the end of their study. Students are sent in the companies and schools to practice and learn from the work places especially at the end of training in schools, but the challenge here is that some industries do not have trainers to do the training. Students only have to find out what to learn and what not to learn and may not even be allowed to use certain machines or access certain information in those companies as most information is taken to be classified information.

From the above challenges and solutions that teachers suggested, it is evident that some challenges directly affect teaching and learning process whereas some influence it indirectly. It is also evident that teachers also observed the need to increase skill training which I believe can be achieved through learning by doing/through practice as one way of combating the challenge of negative attitude towards VET and also as way of achieving the goals of VET of self employment, self reliance among others. This observation rhymed with my desire to improve my practice through use of learner centred approaches focusing specifically on experiential learning and learning in groups.

4.4. B: Learner-centred approaches as applied to teaching and learning process

In this theme I present and interpret the information or data that was generated during the process of applying learner centred approaches in the teaching and learning process of teacher trainees of technological studies (DES). Employing of learner-centred strategies in teaching and learning process was my major concern throughout this study so as to develop an understanding of how best I could employ them in my practice while facilitating students learning. Since learner-centred strategies to teaching and learning are diverse, I only focused on two i.e. experiential learning; learning through practice and reflection and group learning using discussions as a mode of learning to suit the time that I had for this study. Each approach that was employed forms a subtheme under this major theme.

4.4.1 Experiential learning with emphasis on learning by doing/practice and reflection

A reflection on my experiences garnered from my studies that I have engaged in and the nature of teaching and learning that I have been exposed to as a master student at HiOA coupled with my experiences as student and teacher in Uganda were the point of departure towards adopting experiential learning in my practice as a facilitator of learning. This was enhanced by the teachers' realisation of the need to actively involve students in their learning process so as to motivate them, enable them to acquire knowledge and skills that they can effectively put to use when they join the world of work as indicated in theme, A, above. In my own view this approach to learning helped teacher trainees to learn experientially through constant practice in various skills and also in sharing their experiences and ideas about a given task which I consider as an important aspect for their own learning. In order to implement this approach I together with my students tried to adopt documentation of lesson notes, log writing, reflective questioning through dialogue and discussion, learning through practice and reflection and the description of how these techniques were implemented is given here below. It should be noted that this part is bigger than any other part simply because it is where the emphasis of this research is placed.

4.4.1.1 Documentation of personal lesson notes

Documenting of lesson notes by the students was thought as a means of empowering them to document their learning experiences, concepts and ideas as they were generated from the lesson discussions and also as a way to make a follow up of what they have learnt in a given task or lesson. From the very beginning of this study I introduced the teacher trainees that I collaborated with, to the new approach to learning where they were to document their own notes during the lesson which seemed a mystery to them at the start since they were used to teachers giving them notes during the lesson. We discussed the benefits of making their own notes of which one was to enhance them understand what they have learnt other than just reading only what the teacher gives them. I tried to make them to understand that it is not only what the teachers give them that is the sole right thing. I used to tell them that they are in better position to know what they wanted to learn than I did and thus they are in better position to document what they feel is relevant and meaningful to them. This was to encourage them to develop self esteem and also to know that they are responsible for their own learning. This would help to minimise the practice of memorising the information/notes given to them by teacher without understanding them for the purpose of reproducing it in the examinations. I was optimistic that by doing this it will help the teacher trainees to improve on their writing skills, the rate of attention and active listening during lessons as well as self reflection skills. I also hoped that since they were to be teachers in future,

by mastering such approach to learning would imply that they would employ it in their own practice as future teachers which would bring about sustainability of the approach.

Implementation: From the start I told the students (both groups) that I would not give them any notes and thus I encouraged them to always take note of whatever they feel is vital and relevant for their learning. Since what they were to learn was dictated upon by the course description of their subjects which neither them nor I had power to change, I made sure that they got the course description in advance, studied it so that they could be guided on the subject matter they were to concentrate on /learn. Freedom was only given on the way they wanted to learn it since that was up to the teacher and the students. I always emphasised that individual students' participation in the learning process was of paramount importance towards note taking and making. I also highlighted that the descriptions and explanations given to the notes taken will depend on how they understood the concepts and how they find them relevant to their experiences which they might have acquired previously or within the learning process. Since we were operating in a group, students were wondering whether note taking and making should be done in groups too. However when I inquired from them how they would like to do it, they said they would like to discuss in a group but document as individuals which I agreed upon with them since their interests matter a lot in enhancing their leaning.

In some instances where I facilitated group discussions, a task would be presented and students would discuss and raise a number of ideas. I encouraged them to always explain their points and ideas so that the rest of the group members can understand the context under which an idea is raised. This kind of explanation given by a particular student would activate other students' minds to think about which I believe helped them to make detailed notes afterwards.

Following up the practice: To ensure that students documented their own lesson notes and also to ascertain how they were fairing in their practice, I used evaluation questions on the tasks covered and also reviewing of previously learnt topics with the students in class.

I used to design evaluation questions that required them to explain certain concepts whenever a given topic is finished which they attempted individually. This was because students are fond of telling teachers that they write notes yet they do not and at the end of it all they start blaming the teacher that he or she never taught. Since the teacher trainees were aware that at some point they will be asked to answer questions about a given topic, they tried by all means to take notes.

Another way used to follow up the practice was reviewing of the previously studied tasks together as a class whenever we met in the following lesson. I assumed that if students could still remember what we learnt about the last week, then they must have taken notes which they were

revising and this would be an indicator that some learning took place. Through this exercise, any misconceptions that would be identified would be collectively discussed and corrected and we would also discuss more on concepts and content that were said not to have been understood by students in the previous lesson.

Through my interactions with these teacher trainees during our end of month meetings and also during class interactions, they indicated a number of challenges as regards this practice. One of the challenges identified by students was lack of knowledge on what to document and what not to document. Other challenges associated to this practice will be presented in detail in theme C.

4.4.1.2 Learning through practice/doing

This was intended to ensure that teacher trainees acquire some technical skills in wood work for those that I was facilitating in woodworking. For the group that I facilitated in teaching methods, it was intended that they acquire skills in lesson preparation, designing of schemes of work and also in ensuring that they practice teaching skills. All these skills tried on or practiced were dependent on the course description for each class thus neither me nor the students could decide otherwise. From my own experience, I had learnt that to learn and master a skill be it writing, woodworking, cooking mention it, it must be practiced. So I encouraged the teacher trainees to practice various skills that were within the specifications of their course content which we were following. I tried to ensure that students in both groups practiced on skills that were relevant for their study in the courses that I was facilitating them in.

Implementation:

Wood work class.

According to the course content of wood working, it was specified that students needed to get familiarised to the various woodworking tools, different woodworking techniques like planning and smoothening of timber, making of simple woodworking joints since they were beginners. When we met for the first lesson on 31st of August 2011, we discussed on issues regarding safety in the workshop. I asked students to use 10 minutes to brainstorm ideas that they thought were essential for consideration when working in the workshop. Much as they were new in the field they employed their experience of Laboratory rules which they studied in their secondary school to suggest some ideas which they presented and we discussed together so as to create a common understanding. After that interaction with the students, I took them to the woodwork workshop located at the section of technological studies to have a survey of the tools that were present. This was intended to familiarise them to the woodworking tools and machines so that by the time they are to use them, they are aware of which tool to use and for what purpose. They saw and touched

various tools and we dialogued on the uses of each of the tool we managed to come across however most of the tools were not functional and thus they did not use them to see how they worked.

Having given them the course descriptions when we met on 24th August 2011 which they studied in advance, we discussed on what to start with and they agreed that since they had no prior knowledge about the course they should start with preparation of timber which involved planning, smoothening, and gauging of timber ready for use. I gave them the specifications which they were to follow as a measure of their accuracy. I told students to read about the procedures to follow so as to do the work which they did on their own. They asked me for reference books and I gave them some copies of the books that were available at the section and others were to be obtained in the library by themselves. Due to the fact that most tools and machines were not readily available at the section, it was not possible to have practical lessons on the same day when I met students on Wednesdays instead students had their practice on every Friday when they could be able to access tools and were also free from other lessons.

Since I was not always at Kyambogo on Fridays, I asked the workshop technician at the department of civil and building engineering at the beginning of the semester to always assist and guide the students as they practiced in my absence and also made students to understand that he was the one to guide and assist them in case they needed assistance. After every practice, we would then meet in the next lesson and each student was asked to share her experiences and challenges during the practice. From my experience and observation the approach was helpful since students who had had no prior vocational training could afford to produce the items with notable improvements in the accuracy as time went by. By the end of the study period students were able to plane timber, smoothen and gauge it to the required dimensions and also were able to make different joints as was specified in the course content and some of the joints are shown in the picture on the next page.



The picture on the left shows one type of joints which students worked on in their workshop practice

This kind of learning was found to be motivating. Students told me that they were happy because they could produce certain items all by themselves which they never

thought would be possible within the little time they had been in the programme. The most challenging situation here was lack of tools whenever the students wanted to practice. In certain instances students would go for practice and find that other students from other sections are using the tools and/or even other people from the nearby suburbs would come and occupy the machines. In such situations students could not finish their assignments within the stipulated time which made us to stagnate in the process as we could not continue to another skill when the first one is not finished. Despite the challenge above, students were able to practice all the skills they were to accomplish within the semester however much there were variations in the time of finishing the assignments.

The technical education methods group

This group as already highlighted in the process of acquiring acceptance was the class that I was supposed to facilitate in technical education methods and that is where I derived the name. It was a class of three year two DES students that made up this group. The major skills that these teacher trainees practiced on were; preparation of schemes of work, lesson plans, and employing their lesson plans in the actual teaching practice. Having discussed the reasons why teachers teach, the different methods employed in teaching and the conditions under which they apply and identified those are suitable for teaching and learning of technical subjects, I also introduced them to the concept of didactical relations model which we discussed together by studying each element separately.

The use of the concept of didactical relations model was found to be similar to what they had already studied about when dealing with preparation of scheme of work and lesson planning. After all that, I asked students to make a scheme of work in any one of the subjects in their fields of their choice which they can use in their teaching practice putting into consideration the elements of the didactical relations model. The format for their schemes of work they followed was the common format which is used almost throughout the whole of Uganda which appears as shown below.

Name of the school.....Class.....Term.....Year.....

Name of the teacher.....

Week	Number of periods	Topic/ Subtopic	Content	Aims and objectives	Teaching and Learning Methods	Teaching and Learning Materials	References	Remarks

Figure 4.4: The format of the scheme of work used by teacher trainees during their practice

In different columns, students were supposed to put items that matched the headings of each. After they had made the schemes of work, we discussed each student’s scheme and they made changes where they found it necessary and thereafter I asked them to use the same concept to derive a lesson plan from their schemes which they were to put to use to teach their fellow students. Each student made an 80-minutes lesson plan (a standard double lesson in Ugandan secondary schools) based on his scheme and then used it to teach. In this way each student acted as a teacher where as the rest of the students became his class that he facilitated. This was intended to make them realise the relationship between the planned actions and how they can be put into practice. Since these students were to become future teachers I found it very important for me to make them get used to the practice so as to develop confidence and understanding of the teaching practice.

The lesson plan was to be more simplified giving details of what is going to be covered in a given lesson, stating all the activities that the teacher and the students will engage in so as to make a lesson successful. The format they adopted was similar to the one they had studied about in year one however this one was more details and it had to specify the activities the students and also the desired learning outcomes which were not present in the old model they had and it looked as below.

Name of the school.....Date.....class.....No. of students..... Average age.....Duration.....

Topic.....Sub topic.....

Objectives of the lesson.....

Teaching and learning materials.....

Teaching and learning methods.....

Lesson implementation

		Teacher's activity	Learner's activity	Learning outcome
Introducing the lesson	Step 1			
	Step 2 etc			
Implementation of the lesson	Step 1			
	Step 2 etc			
Evaluation phase	Step 1			
	Step 2 etc			

Self evaluation of the lesson.....

Figure 5.4: The format of the lesson plan used during the practical teaching exercise

Since our lesson took 2 hours, the student would use 1 hour and 20 minutes practicing teaching and in the next 40 minutes a student would share with us his experiences, his feelings about the process and thereafter other students would give feedback based on what they have observed and what they thought of a good practice. I would also give my comments and feedback to supplement what others have said based on my observation of the practice and also on what I understood about teaching. This would lead us to the end of the lesson time and when we meet in the next lesson the same process would be undergone as already explained above but this time with another student.

4.4.1.3 Learning through reflection

Reflection in this case refers to the discernment of the relation between what we try to do or what we do and what happens in consequence. No experience will have meaning without some element of thought(Dewey, 2007, p. 75). Reflection is thus thinking for an extended period by linking recent experiences to earlier ones in order to promote a more complex and interrelated mental schema(Clark, 2011). This thinking involves looking for commonalities, differences, and

interrelations beyond their superficial elements and the main goal is to develop higher order thinking skills. I employed learning through reflection in the process of teaching and learning throughout this research period in order to encourage and empower students to make connections and think critically upon their learning process and also on the content they were learning. Thus this practice took the form of reflection in practice as also known as reflection in action (Schön, 1983) and reflection on practice.

Implementation

Throughout this development research project we mainly used two techniques which I thought would help to encourage learning through reflection i.e. keeping of personal reflection log/journal and through dialogue and feedback. As already stated in the first part of this chapter, I started by introducing students to the methods to be used in the learning process and one of the concepts we talked about was reflection. I asked students to explain what they knew about reflection and how it can be practiced to help them in their learning. Students brainstormed about the concept and came out with different views however I asked students to go back to their group and combine their ideas so as to come up with one definition which would work as our operational definition and thus after a thorough discussion they came up with the definition below

The year one class defined reflection as “Reflection is where you study something or experience something and you think about it so as to understand it better, as in how and why it happened”.

Year two class defined it as “Reflection is thinking about what you have done and how you have done it so that you can get new way of doing it again”

I also told them that reflection also involves thinking about what was done well and what never went right and the reasons why it happened the way it occurred and think of a new way of acting in order to improve what was done. Thus after such discussion we agreed that we shall use two forms of thinking about our own learning which involved writing personal logs and dialogue in class.

Log writing

Throughout the whole period I kept my personal logs as a tool to aid data collection as already mentioned in chapter three where I kept track of my actions, my experiences and reflections about them which guided me to plan for new actions. My experiences were based on my interaction with the students and also on my observation of the situations as they unfolded during the learning process. I also incorporated students’ responses as regards their experiences and challenges which I also used as guiding elements in designing new action plans.

Having been introduced to the idea of log writing and having kept my log in my studies at HiOA, I too introduced the practice of log writing to the participants with a major aim of empowering them to learn to reflect upon their learning experiences and to transform these experiences into written form/documents so as to act as their future references. When I first introduced them to the idea, they wondered what it was and in order to make understand better I relate it to a journal or diary which they were used to. However they wondered how they can use a diary to keep track of their learning since what they knew that a diary is used to note what they wanted to do, or what they did at some specific period of time. I informed them that the way it is used to take note of the events done and those yet to be done, we can modify it to incorporate what is done, the experience from what was done, and the learning that occurred as a result of the experience and the new plan of what to do next as a result of the learning. We thus agreed to adopt a five-column log format which included the date, the event/activity, how it was done/experience, the learning/reflection and what to do next as can be seen in the table below.

Date	Event/activity	Experience/how it was done	Learning/reflection	What to do next

Figure 6.4: The format of the reflective log used during the field study

We discussed what was to be written in each column and thus it was assumed that everybody knew what to do. However, during our class meetings I kept inquiring on how far they have gone with the practice, whether they are putting the idea into practice but all in vain. They later revealed that they did not understand what to write, whether they should only note what they learnt with me or also include what they learnt from other teachers. I asked them what was convenient and relevant for them, some decided to keep a log on what they were learning during my lessons whereas others opted to include other issues from other subjects. Since my intention for introducing the idea was to empower them to keep track of their learning in their entire learning process I told them to do what they felt was vital for them.

After this clarification on what to include in the log I expected them to start writing their logs however when I carried out a further investigation during one of our end of month meetings (with both groups) I found out that the majority of the students did not write their logs. When I inquired why they never wrote them, this time some participants revealed that they still had challenges with this practice which included:

- They thought that logs were some form of course work assessment and thus they feared to write their reflections due to the fear that they may note some issues that would make them get poor grades in their exams.

This was affirmed by the incidence when one of the students in year two, who had written his logs, refused to share them in class but only wanted me to read and award marks and when I asked why he never wanted to share them he told me he never wanted other students to hear what he had written. This could probably be due to the fact that he thought that students would copy his ideas or he was not confident with what he had written or even he could have written impressive statements about his learning so as to get better grade that his colleagues were aware of, and so he thought they would laugh at him when he presents them.

- They found the practice too time consuming and thus said they could not have enough time to write what they had learnt since they had a lot of work to do in other courses.

Failure to write personal logs was worsened when I told the students that it was not a form of an assessment, instead it was meant to assist them to reflect on what they have learnt so that they can be able to understand what they learn better. This could be attributed to the fact that they were used to doing class exercises meant for marks and grades and after realising that it was not the case for logs, then they chose to concentrate on those assignments that resulted into marks and grades. I came to know about this when I asked them continuously about their logs and they told me that they were preoccupied by different assignments and thus had no time to write logs. In the next theme I will present how we coped with these challenges so as to continue focused on what we wanted to achieve.

Use of dialogue and feedback to enhance reflection

Dialogue with the students during class lesson and giving of feedback on students work was also another way that I employed with the students to ensure learning through reflection. Lee.V.Ginny and Barnett.G.Bruce (1994) observe that one powerful form of reflection occurs when educators engage in professional dialogue with each other in small groups. I thus employed dialogue in class meetings/lessons with the participants (students) in order to enhance their reflective process by using specific questions targeted to ignite insights into what they did and how they did it so that they may be able to derive meaning from their experiences which reflection is all about. Lee.V.Ginny and Barnett.G.Bruce (1994) also argue that reflective questioning creates opportunities for individuals to reflect aloud to be heard by one or more colleagues and to be prompted to expand and extend thinking through follow up questions. This is one of the reasons why I found this technique very important for use in this research process. Donald Clark (2011) also notes that although feedback that enhances reflection can be provided via written comments, they are probably more powerful when used interactively in interpersonal dialogue. He supports

the use of dialogue where he asserts that carrying on a dialogue with one or more learners about their work is probably the ultimate in promoting reflection via feedback.

Implementation

Woodwork group

After students doing their practice in the workshop and we are back in the following lesson, the first thing that I used to do was to ask them of their experiences that they encountered during their practical sessions and also the challenges that they could have met. This did not only help me to know what they had gone through while I was away but also helped them to reflect on what they did, what went right, what never went right with them and also the challenges they encountered. Through this students would even evaluate their progress in their work as can be seen in the pictures below.



Pictures above are of Students of woodwork class evaluating their work after workshop practice

In the process of evaluating one's work each student described what she did, the feeling of the experiences encountered and also the challenges they met in the process of producing the item in question. I always asked each one of them to think of the way forward and write down what each one was going to do to improve on what they had done. I also kept on encouraging them to note down their reflections that they have pointed out in class in their personal logs so as to act as their reference points which I came to find out that they never did. I actually used this method as a means of eliciting students' reflection and also to help me to evaluate the learning process and the effectiveness of learner centred approaches that I had employed in my teaching. The common questions that I asked students were:

- How did you feel when you were engaging in the actual practice in the workshop?
- What new thing did you learn from your practice?
- What challenges did you meet?
- How did you manage to finish your assignment?
- What do you think you can do to improve on what you have done?

Some students said that in some instances, especially when they used certain machines for the first time, they felt some form of phobia, which went with time when they continued using the machines, others had an inner drive which told them they could do it if others could (some form of motivation) while others became excited when they found out that they could operate some machines, use tools, or complete assignments with some improvements in accuracy among others. In simple terms different students had different feelings about what they did, different experiences, and different challenges and of course suggested different ways of how they are going to improve their practical experiences.

With the group that I facilitated in teaching methods

The same kind of dialogue as explained for the wood work class was also done with this group only that in this case we only concentrated on how their experiences in the practice they were engaged in as already highlighted in the part of learning through practice above. This was especially employed after each student has practiced the teaching process. Each student was given a chance to share their feelings and experiences with colleagues by explaining how he felt about his practical experience, what he feels went well and what he feels was not done right. In order to encourage them to think and reflect about their experiences and their learning I would always ask them what they feel they should improve on, and how they intend to achieve it. At the end of the lesson a student who has presented his lesson would tell us (me and fellow students) of his plans targeted to improve his practice which followed up in the next presentation. During this dialogue the group members who have been observing their colleague do the teaching would also give their comments basing on what they have observed and what they feel can be improved. I too would my comments and feedback.

Through this kind of dialogue I was able to jot down students experiences, feelings about the whole learning process, ideas, suggestions for their improvements and improvement of the whole learning process which actually acted as basic data for this research and also as the basis for improving what I was doing with them.

4.4.2 Group learning

Another form of learner centred approach that I employed in the teaching and learning process during this development research project was group learning which could also be called cooperative learning a notion suggested by Johnson and Johnson(Johnson & Johnson, 1999). We employed this strategy from the very start of the research period as a means of encouraging participants active involvement in their learning process as well as enabling students to be responsible for each other's learning. Throughout the research period I kept informing the

students that they should not expect me to know everything that they are to learn. I remember telling them that I alone knew nothing about what they should learn but together with them we can know everything. I kept reminding them of the proverb “Two heads are better than one” to emphasise the importance of working together in their groups. In addressing this strategy the following items were put into consideration: group formation, learning in the group, group leadership and group rules and regulations.

4.4.2.1 Group formation

There was no specific criterion that was followed in forming learning groups in the two classes whose learning I was trying to facilitate thus group formulation was dependent on the situation that prevailed in the classes. The two classes comprise of three and four students respectively and when I inquired from students on how we should go about group formation they said that since the class numbers was already small there was no issue in splitting it again and thus we agreed to work as a single group of three students for year two class and four students for year one class. This was agreed upon on the first day of our meeting on 24th of August 2011. Thus the participants continued to operate in these learning groups until the end of the semester since no new students joined the classes.

4.4.2.2 Group leadership and group rules and regulations

As regards leadership in the groups, I did not part in issues concerning the choice of their leaders in the two groups. By the time I met the students in our first meeting on 24th August 2011, they had already chosen their class leaders whom they decided to continue with when I started working with them in the groups. However I emphasised that all members of the group were responsible for group activities including chairing of discussions, presenting of group findings after discussion and recording of group findings. To achieve that, I tried to encourage each member of the group at one point during the entire research period to carry out one of the activities mentioned above. Group responsibilities were rotational in a sense that if one member of the group chairs the discussion in one session then in the next session he/she had to take up another role giving others a chance to do the same.

There were no specific/definite rules and regulations that were set for the operation of groups because students felt that they were old enough and that they will exercise their sense of discipline and responsibility to respect others in the group during group discussions and also in organisation and execution of group activities. I chose to respect their view but we agreed that attending and individual participation in group discussions was mandatory for every member much as some of

the students did not live by that agreement. However from my observation, some students did not act as agreed as they showed some misconduct by absenting themselves from group meetings.

4.4.2.3 Working in the group

Group learning which actually took the form of whole class discussion was the major mode of learning that was adopted throughout the entire research period. I call it whole class discussion because the groups we used comprised of the total number of students in the whole class as already mentioned in section 4.4.2.1 above. I particularly used group discussions in my lessons to ensure that students engage actively with the learning tasks on their own so that they could easily understand it better and also to make them own their learning. I made sure that students sat facing each other as seen in the picture below to ensure students maximum attention towards group activity. And since the number of students in a group was also small, it was imperative that they seat close to one another so that they can communicate easily during their discussions.



In the picture on the left, teacher trainees of woodwork class are in a group discussion during the lesson

Students resolved that they would also meet outside at their convenient time and the issues regarding when and where to meet would be discussed and agreed upon by them when they have free periods on their timetable. Their decision was justifiable due to the fact that their semester workload is divided into a number of course units which are taught by different lecturers at different times. Thus they did not have a specific time scheduled for group discussions but from my observations most students met and discussed their learning tasks together except a few students who used to absent themselves.

As already noted in section 4.4.1.1 of this chapter, students agreed that they would discuss as a group but documenting was to be done individually. This was particularly so when they dealt with group assignments that were to be graded. I agreed with what they had suggested due to the fact that I also saw it as one way of bringing about individual accountability in the group operations. Since I was employing action research methodology, it was imperative that I demonstrate democratic values which I too believe in and uphold. I also tried to encourage them to practice group documentation but it did not take root as students never implemented it. When I inquired why they never wanted to document as a group, some students complained that some members

were not being cooperative and did not participate fully because they knew after all their colleagues would finish up the work which would earn all of them the same grade. So they suggested that they should continue discussing in groups but document individually as a way to showing one's contribution towards group discussions.

In my interaction with the two students that used to absent themselves for the group discussions, one of them told me that at times she is not aware that there was to be group discussions and sometimes she would fail to know where her colleagues are for the group discussions. So eliminate this kind of excuses I encouraged all the members to share their phone numbers such that they can always alert their colleagues of when and where they are meeting. The woodwork class kept on complaining that they found it hard to link up with two of their colleagues in that one did not have a phone and again she was not staying within the vicinity of the University while the other much as she had a phone, would switch it off, and even when she had been at campus in the morning she would pretend that she will attend but eventually does not show up. In such case I embarked on counselling and it showed some positive results since one of the students that used to be absent started attending except the one that stayed very far from school. She told me that she was staying with her Aunt who used to leave her with kids to take care of even during school time and sometimes she would not give her money for transport. I had nothing much to do with her issue but I informed her that since she was government sponsored she could ask to live in the university halls which she said she would try the next semester.

In the second year class there was not so much of problems with the group work only that one of them did not show interest in studies generally. At first I thought that maybe he was not interested in what we were doing but when I interacted with some teachers at the section who have been teaching him, they told me that they faced the same challenge with him. Whenever I would sit and talk with him individually, he would tell me that he would change which change was awaited for in vain. Sometimes he would attend and engage actively in group discussions especially during in lesson discussions but his attendance was not regular. However his colleagues told me that he used to join in outside class discussions but documenting was a problem for him. I had to always remind him that I needed to see his work and in most cases I would have to ask him over and over again for his work until he could submit it. This reminded me of Roy Killen's assertion that the value students attach to school and learning influences what they can learn. This was so true because from my observation and interpretation, it seems this student did not attach much value to school and learning that could be why he found being away from class lessons and school was not a loss to him.

4.5. C: Challenges that resulted from application of learner centred approaches in the teaching learning process and the workable solutions

The two learner centred approaches that I adopted in the teaching and learning process of the teacher trainees was a new phenomenon to them and being my first time to employ them in my teaching, I could not rule out the possibility of challenges in trying to implement them. It was thus necessary that the challenges are addressed as they arose so as to be able to achieve the objectives of my study. Together with the teacher trainees we identified the challenges that we were encountering in the process of implementing these approaches and we tried to find solutions to the challenges so as to forge a way forward. In this regard we made use of end of month meetings and in class dialogue in which we would discuss and evaluate our actions and learning process. During these meetings and in class dialogue/discussions we converged and discussed participants' progress in their learning activities both at individual and group level, identify the challenges being encountered and also empower one another so as to achieve their learning objectives. Through these discussions we were also able to come up with possible workable solutions for addressing the challenges that emanated from the use of the approaches discussed above.

We had our evaluative meetings at the end of the month simply because we met once a week and this means that we could not have end of week meeting apart from in class dialogue thus we found important to meet at some lengthy period of time when we had gathered a number of experiences that we could share and dialogue on. There was no big difference between end of month meetings and in class dialogue because we held them towards the end of the lesson time. We had agreed that the end of month lesson time would majorly be used for evaluating our progress and it is when students were expected to present their logs which proved to be hard due to the fact that most of them did not document their learning experiences. I personally chose to use this time such that we do not interfere with other lectures' time. The challenges encountered in the use of the learner centred approaches in the teaching process together with the solutions that we devised to address them are discussed here below.

4.5.1 Inadequate tools and equipment

The most challenging situation to learning through practice was lack of adequate materials and equipments for students to use during their practical exercises. This was particularly a challenge to wood work class due to the fact that they could not readily get the materials, tools and machines to use for their practice whenever they wanted to practice. This was worsened by the fact that the woodwork workshop at the technological studies section was short of tools and machines as most of them were not in good working conditions. This was also accelerated by the fact that the technician at the above mentioned section was not as cooperative as I expected; he seemed to be

too much materialistic at the expense of students' learning. I came to know about it when students told me that he always demanded them to give him money (in form of bribe) before he can avail them with any tool in the workshop or guide them in their practice as he ought to do. This was, according to me, an unfortunate scenario which I hope the institution is not aware of.

After realising that it was not possible for students to have their practical exercises at the section, I collaborated with another woodwork workshop technician at the department of civil and building engineering who agreed to assist the students whenever they wanted and thus he and the students agreed to always meet on Fridays since that is when they were free and could have afford to have enough time for their practical tasks. The chance to have practice at the department workshop helped learners to have greater exposure to different tools and machines since it is better equipped compared to that at the section. The teacher trainees commended the technicians' assistance and they said that they got adequate assistance whenever they wanted it. Working at the department also helped students to meet other practitioners from outside the school who come to do projects in the university workshops who also helped them through their activities.

4.5.2 Documenting of personal notes

At the beginning of this practice students found some difficulties in identifying what to write and what to leave as they found almost everything was relevant. One of the students in the woodwork class raised her concern where she said

“But teacher it is hard for me to know what I should write and what I should leave. When we discuss we raise a number of points which are important and relevant and some of them are interrelated. So sometimes I fail to know how I can note such points”

From my observation, it was not the case with her alone; almost each student faced the same challenge which I attribute to the nature of learning that they were accustomed to where the teacher gave them readymade notes. It is not a surprise that even at the university level students are still given written notes from their lecturers. This challenge was further accelerated by the fact that some students found it hard to express themselves in good English which consequently affected the quality of their documents. This could be the reason why some students were too shy to share their experiences or share their logs.

However during our discussions I continued to encourage them to take note of key points discussed on a single item that they found relevant and important for their learning and to always refer to their course description since it was a guide of what they were supposed to learn. I also encouraged students to be more attentive and to listen actively when each of them are deliberating their views so as to be able to sort out key points which they can expound on when they are

making their detailed notes. To ensure that they improve on their English, I always asked gave them assignments which they were to document individually and after marking and checking their documents I would discuss them one on one and give them feedback on where they need to improve. Through these endeavours I found that students had improved in documenting their notes and I feel that once the practice continues they will be able to master fully.

4.5.3 Writing of reflective logs

Writing and keeping a reflective logs was a challenging phenomenon for the teacher trainees since it was a totally new idea altogether. It is my observation that much as we had discussed about it at the beginning and students had seemed to have understood the idea behind it, they did not fully understand what to write and why they should keep it. Most students associated it and or understood it as a form of assessment and thus some feared to write down things that would earn them a low grade while other who had tried to write their logs never wanted to share them with the group members may due to the fear that their colleagues would copy from them as already mentioned in section 4.4.1.3 of this chapter. When I realised that it was the case I had to re-orientate them to the idea of log writing where we again discussed its purpose and what should be included in it. I informed them that it was not a form of assessment but it is intended for their own development and improvement of their own learning. Although the participants seemed to have understood the intention of log writing, the idea of associating learning to passing exams continued to preoccupy their minds which made it even more difficult for them to write logs. It is my interpretation that they thought it was a waste of time to write logs since they do not add anything to their grade.

Since log writing was intended mainly to encourage learning through reflection and after realising that students had not taken it so serious, I chose to concentrate on use of dialogue/reflective questioning to enable to think aloud when in class so as to be able to reflect on their learning process. During such kind of dialogue I noted down their reflections which I used to follow up their progress and also to plan new actions. I also encouraged students to write down their reflections which they have pointed out in a dialogue so that they can refer to them when need arises.

4.5.4 Group learning

Much as we manoeuvred to operate in groups throughout the whole period of this research and despite the fact that the participants had agreed with the idea to work in groups, it was found out during the process of implementation that some members did not operate to the expectations of the groups that they were in. The participants complained that some members did not participate fully in the group activities as they used to absent themselves when group activities are to be

carried out and considering the small number of the group, it implied that absence of one or two members in a group would render group activities to be put on halt. I attributed the reluctance of some members towards participating in group activities to the nature of the teaching and learning they were used to which did not encourage cooperative group learning. The failure to fully utilise the opportunity of working in groups could also be attributed to the ignorance of the said students of the significance of cooperative learning and group dynamics skills which was one of the setbacks to the use group learning. It was also a challenge for me to supervise or follow up their group discussions which they organised outside lesson time and therefore I had to rely only on what they told me.

To minimise on the severity of this challenge I together with the students agreed to carry out some of the group activities during the scheduled time for lesson when I am also around. This improved on the level of attendance as most students were always there for lessons which made them readily available for group activities that we organised in lesson time. This solution also proved to be a challenge in its own way in that students became reluctant to chair group discussions when I am present but instead wanted me to always chair their discussions. However in such situations I would present them with a task and move out of the class for some minutes to ensure that they start on their own and then I would join it just to supervise what they were doing. I ensured that during these discussions each student participated in one of the activities as already mentioned above (see section 4.4.2.2). This meant that attending group discussions was mandatory and this did not only increase students' level of attendance but also increased learner participation in the group tasks which consequently made them to benefit from one another and also to acquire some group learning skills.

I kept on encouraging and advising the teacher trainees to continue working together as it was for their own benefit. This challenge however still occurred especially when they were to convene for group meetings out of lesson time but with limited cases this time. What I can say here is that since learning is a process it will take time and energy for a complete change to take place. However I am generally impressed and happy that we managed to work throughout this research process and I appreciate the learning that I together with the teacher trainees acquired from this process of implementing these learner centred strategies in teaching and learning process.

4.6 The learning experiences from the research process

This subtheme relates to the evaluation of what was discovered and learnt by both the teacher trainees and I during the implementation of the learner centred approaches mentioned presented above. All the experiences encountered in this research process were very crucial in their own way but in this section I will present those experiences that were found and considered to be more

significant and outstanding for the implementation of learner centred approaches to the teaching and learning process of teacher trainees at KyU.

4.6.1 Teacher trainees learning experiences and evaluation of the process

Students' experiences and learning was captured during the various discussions and reflective dialogues that I engaged in with my students in the class and during the end of month meetings which were usually held on the last Wednesday of every month i.e. 28th of September, 26th of October and 30th of November. As it was noted under theme C above most students did not write their logs but during group discussions and dialogue with the students I noted down their reflections and experiences in my note book and it is these reflections and experiences that I will present. I also asked students, when we met on 30th of November 2011, to write for me a report indicating their most important experiences and the learning they had acquired in the process of implementing experiential learning and group learning. I gave them a guiding question which would enable them to reflect on the entire process so that they can be able to write the report and the question was "What have you learnt in being the participant in this research?" It should be noted however that not all the participants managed to write these reports due to the reasons known to them and I had to respect their decision. In the reports that students wrote, students' evaluation was in terms of merits and demerits (See appendix ...). I present the teacher trainees learning experiences for the two groups in general but in some instances I specify which group said what wherever I deem it necessary. Thus from the students reports and the discussions with me in the class the following were noted as most significant learning points.

Most Students said that the methods employed during the course of the semester gave them a chance to think for themselves and to air out their ideas. One of the students in year two class noted in his report that the methods used helped to reduce the tendency of what he called "spoon feeding" by the teacher because most of the learning tasks were done by the students on their own.

In one of the report, one student in year two group noted that methods like discussion and brainstorming initiates creativity and increases student's participation since the learning tasks are done by each and every individual within the group.

Some teacher trainees appreciated the use of the approaches especially experiential learning where they said that it helps learners to understand the content very well. They said that experiential learning allows someone time to dig into what one has learnt by reflecting on the content read and studied which eventually brings about better understanding of the subject.

Students also said that these methods help students develop research skills since they have to search for material from libraries and other sources like discussion with other members outside

the class. Students will be confident in whatever they will be talking about especially when answering questions which they have researched about since they have taken some time searching various sources of information about the subject. This was highlighted by one of the year two students in the meeting of 28th September 2011 when they were sharing their experiences upon the task that I had given a task that required them to research on different teaching methods which they presented in class.

The teacher trainees noted that these methods are also helpful on the side of the teacher because most of the work is done by the students and the teacher comes in to guide and give assistance to the students when they need it and therefore a teacher will have enough time to think and plan for the next lesson. Moreover the teacher is able to evaluate the learning process with the students in class which gives a clear picture on where to start next.

The teacher trainees also said that such methods motivate students to learn as a result of students knowing that they too can do their work on their own and can get correct answers to various questions by themselves which in turn builds a positive attitude towards learning. In the same way they help to improve performance due to high competition in a sense that each and every student or a group of students will be working hard so that they get the highest mark or their group becomes the best performer in a given task or exercise.

They improve teacher- learner relationships because the teacher will have more time with the students especially when they are working in groups than it would be when in a big class. The teacher will be in position to identify each and every learner's weakness and give help accordingly as compared when dealing with a bigger class.

These methods make students responsible for their learning. In other words they reduce over dependency of the students on their teacher thinking that he/she will after all give them everything they need to read and revise. Instead they are kept busy trying to plan strategies for their own learning, when, how and what to learn at some particular time even when the teacher is not present.

The teacher trainees also said that the method of learning by doing is important in their learning in that it allowed them to exercise on what they have been taught which enabled them to gain some concrete experience and skills which they considered as necessary for service in the world of work. Students of woodwork said that when you learn something by doing it practically you get some experiences and insights which you can never get when you just learn about it. One student said "when you just read about something or you are only told how to do something for example the procedures of planning a piece of wood you may not really get it. When they talk of proper

posture when planning you cannot imagine it but when you have done it and seen how improper posture makes you not to do the planning work effectively, you can understand it better and if you are asked to talk about it you explain it with confidence because you know what it means". One of the wood work students also commented that since some of them may not end up not getting teaching jobs, the skills learnt through doing can help them to do their own business in their local area and help them to earn a living.

Students appreciated the use of group learning where they said that it helps students to know each other better and learn from one another. They said that group work also saves time because instead of the whole class consuming a lot of time presenting their work a few individuals will represent their groups which will take less time as compared when it is done by each and every student in a class. One student, during the end of month meeting which was held on 26th of October 2011 with year one students, said that sometimes you may think you have a right answer but when you engage in discussion with others you may end up changing the perception you had as your fellow students will highlight different versions on the idea you had. It was however highlighted that to get the best out of group discussions and group learning it requires that all members of the group are committed to their group, respect one another and fully participates in the group activities.

The teacher trainees also appreciated the use of learner centred approaches in their own learning process but they also foresaw some issues that may not allow them to use these methods when they start teaching. The issues raised by these teacher trainees as I understand culminated from their experiences of the situation as they observed it when they were students at their secondary school education.

Students of wood working said that learning by doing can hardly be used in situations where there are no equipment, tools and machines. One student of wood work said "You cannot teach students practical work when you don't have tools, space and other equipment for the students to use during their learning". They said that this method too requires a lot of time and yet the longest lesson is only a triple which is only 2 hours. Moreover students in most cases have to share tools and when you put them in groups not all will participate due to limited time.

Students also said that the use of Learner centred approaches to learning in class requires that learners are introduced to it from their lower levels of learning such that they get used to them. They said that it requires also that all teachers employ them in their classes otherwise if you are the only teacher using these methods, your students may complain that you are just lazy and do not want to teach them which can make you lose your job.

Students however observed that for effective use of learner centred approaches, the subject content for a given period has to be minimal so as to allow enough time for students do research and reflection about their work and do discussions. Otherwise you will find yourself not finishing the syllabus by the time students do national exams and should students fail exams, it's the teacher to blame.

4.6.2 Personal experiences from the process

Since my focus in this research was to improve my practice as a facilitator of learning using learner centred approaches to teaching and learning through use of action research methodology, my major experiences are related to use of experiential learning and cooperative group learning in teaching and learning process while facilitating learning of teacher trainees of technological studies at Kyambogo University. This research was aimed at developing my own understanding of how learner centred approaches with a main focus on experiential learning and cooperative group learning can be best and sustainably implemented in teaching and learning process.

I learnt that implementing learner centred approaches for the first time on students who have been used to teacher centred approaches is very challenging. In some instances I found myself bringing in some aspects of teacher centred approaches in order to enhance the learning process especially in issues regarding decision making. I had in some instances to push students to do their work, telling them what they should do and how to go about their learning tasks whenever they became reluctant.

Facilitating students learning especially in groups necessitates a teacher to be very much aware of and knowledgeable about the group dynamics especially in issues regarding criteria of group formation, leadership issues and roles of each member in the groups, rules and regulations among others so as to improve the quality of dialogue and learner participation within the groups.

I also realised that learner centred approaches works best when dealing with students who are intrinsically motivated and have a self interest towards learning. When dealing with students who are not self driven by their desire to learn it requires that the teacher identifies their strengths so as to build on them to motivate them either through the methods you use or may be on the kind of feedback and encouragement you give them as their facilitator. This requires therefore that the teacher meets or caters for individual differences. I also realised the aspect of counselling in learning goes an extra mile in bringing students back on board whenever they behave contrary to the expectation of the group and objectives of learning.

I also realised that when working with Participatory action research and student centred learning, the facilitator needs to understand and appreciate that there are other factors within the

participants' environments that may influence their behaviour, attitudes and perceptions. For example the behaviours exhibited by the teacher trainees that I worked with were greatly influenced by the nature of teaching and learning that they have been used to. For example students used to rely on me for every piece of information; they would always ask me of the right answers, right argument, or view etc with a belief that as a teacher I must know what is right. This therefore necessitates the teacher to be patient. In this case I always encouraged and informed the participants that they too are in position to tell what is right as long as they have an evidence for whatever they say and that we perceive things differently based on the contexts we are placed in. It is imperative to recall that learning is a process and thus making a shift from totally teacher centred to learner centred learning has to be a process too.

I also realised that while employing group learning, it is imperative that students exhibit some form of commitment. Lack of commitment to group activities hinders group development process for example failure to keep time and regular attendances in the groups slowed down both individual and group learning process. This is particularly a challenge when it comes to groups with small numbers like the ones I facilitated in that absence of one or two members implies no group work is done.

I also learnt that initiating a change in any system is not something that should be expected to occur automatically. It takes time and energy as well as willingness and motivation to make any change. For example documentation of lesson notes by the students was not immediately implemented as already presented in theme C above however with time and encouragement that I offered to students they learnt the practice slowly by slowly. I hold a belief that much as majority students did not manage to write logs during the course of this research, after realising the usefulness of reflecting on their work based on the documentation of lesson notes, they will with time start keeping their logs as long as they are continuously encouraged to do so.

Having students work in groups and particularly through use of discussions and dialogue both with the teacher and alone helps learners to improve their communication and facilitation skills which are very essential for the teacher trainees-future teachers. Having students to execute leadership roles in the groups helps them to own and be responsible for their own learning. To effectively achieve this, a teacher should give students maximum control and authority so as to be accountable for the group activity and group learning progress. This will enhance their leadership skills. However in instances where a leader in the group exercises too much authority or some form of helplessness the teacher needs to intervene and put things in order so as to get the best out of the group.

It is a good practice to organise groups with rules governing their activity and behaviour and also to have students choose their leader for effective implementation and use of group work but it should be noted that itself is not a guarantee that the group activities will run smoothly. In situations where this approach is used with students who are experiencing it for the first time like in my case, it is important that students are made to understand and learn the group dynamics and also the roles that a leader and each other member in the group should perform.

I also learnt that working with action research to improve an oppressing situation requires that each member of the oppressed group participates from the very start when the problem is identified and formulated so that they are able to understand and appreciate the essence of the research being executed. This will make them to participate actively so as to find solutions to their situation. I derive this feeling from my experience in this research that my participants seemed not fully understand the value of the research much as they willingly and fully participated probably because they did not participate in the problem identification. They only implemented what I had organised and decided on alone and this could be the reason as to why they had to behave in the way they behaved for example failing to write their logs, absenteeism in group activities among others.

I also concur with the students where they argue that when employing learner centred approaches, it is necessary that other teachers in the faculty do the same so. This is particularly important to ensure sustainability of the practice and also to enable learners to get used to the mode of working. Also other teachers may feel threatened in case students admire and opt for learner centred approaches and in order to secure their jobs they may end up fighting that practice which may eventually cause the loss of your job.

I have also learnt from this research process that there is always a habit of shifting of blames from one person to another. Teachers and school administrators always blame the government and policy makers like curriculum developers for whatever happens in the schools and the other way round. This necessitates that a strong collaboration between all stakeholders is strengthened such that most decisions that affect all parties involved are mutually agreed upon as nobody will blame the other if a decision was mutually agreed upon.

Implementing learning by doing especially when inculcating practical technical skills necessitates that there are enough tools and materials for students to use. However in situations where there are few, teachers and their students need to be cooperative and creative enough to improvise and devise means of how they can use the limited resources they have. It also takes the courage and interest of the teacher to devote his energy and time in organising and creating situations where

students can learn practically. For example when I found that my students could not have tools and other materials at the section I had to organise and cooperate with the technician at the department to help out.

4.7 Summary of key issues in the story of action

This chapter started with a process of seeking permission and authorisation to carry out my research at Kyambogo University. This part is presented here in findings even though it was not part of my objectives due to the fact that what I managed to do in this research emanate from this process. My first meeting was with the head of section of technical teacher education who did not give me positive response but I also met the head of section of technological studies that I had started to collaborate with at the end of my first year. He seemed to welcome the idea but he never promised anything because the university had already closed for holidays. By mid July KyU advertised for part time teachers which chance I utilised to get access to the University system. When I joined KyU, I was given the duty to facilitate year one students in woodworking and year two students in technical education methods. It is the teacher trainees of these two classes that I collaborated with as principal participants of this research after they had showed interest in participating in this research.

The results from this research have been presented and interpreted in three main themes A, B and C following the objectives of this research . Under theme A I presented the activities that I carried out, the findings and the learning from the situational analysis that was mainly intended to find out the state of affair regarding teaching and learning of carpentry in VET schools with a major issue being the challenges that teachers and their students experience during and learning process. From my interaction and interviews with teachers and curriculum development official it was found out that the common and major challenges that teachers are facing in their practice included:

- inadequate materials, tools and equipment for students to use in their practical lessons which in most cases render teachers to teach practical lessons theoretically thus hindering concrete skills acquisition and development
- outdated curriculum which does not reflect the current needs of the society and the labour market
- lack of link between schools and labour market which may bring about a mismatch between the skills taught at school and what is required in the world of work
- Lack of avenues for professional development which hinders teachers' capacity to improve on their knowledge, skills and professionalism. This consequently affects the quality of what they do in schools.

- The negative attitude accorded to VET-carpentry by the society and the students themselves which is due to VET being associated to education for academically weak students and those from poor families which is accelerated by the fact that the government does not give it priority in its funding and also lack of career guidance and public sensitisation about the importance of VET. Teachers also revealed that this issue is worsened by the way the government carries out selection of students when they move from one level to another where by academically intelligent students are sent to secondary schools while the weak ones are sent for VET schools.
- Poor staff welfare as reflected in poor salaries, lack of staff houses among others which makes teachers to be de-motivated to perform better in their practice.

Various possible solutions to address the above challenges were also suggested by the teachers that interviewed and among them were:

- Reducing taxes on importation of machinery and tools also that the government should increase funding to VET institutions so as to be able to purchase the needed tools and materials
- Teachers also suggested that the government should provide these institutions with the necessary tools and equipment that most schools could not afford to purchase. However much as most of the responsibility regarding tools and equipment was hinged on governments side, I think teachers should also try to use the tools they have economically and profitably by caring for and maintaining them in good working conditions.
- Registering all practicing carpenters and issuing them with work permits so as to motivate them, to make them feel valued which may reduce on the challenge of low attitude
- Sensitisation programmes should be run on regular basis so that the public can know the benefits of VET and Students also should be given career guidance so that they can have a positive attitude change towards VET and carpentry in general.
- Reviewing the technical education policy and BTVET policy
- Training in skills should be given priority so that students can easily create their own jobs which will eventually motivate them to learn and this can be achieved by involving students in practice of real work as they progress in studies,
- There was need to restructure teacher training under technological studies so as to incorporate the element of skills training and specialisation but from my observation this would take some time and a great effort to be accomplished.

Under theme B, I presented and interpreted the results from the experimentation of learner centred approaches in the teaching and learning process of the teacher trainees of technological studies at

Kyambogo University where the emphasis was on use of experiential learning i.e. learning through reflection and acting and also on use of group learning. In implementing experiential learning and group learning with the two classes that I facilitated, emphasis was put on documentation of personal notes, writing reflective logs, reflective dialogue, learning by doing and learning in groups.

I personally encouraged students' documentation of lesson notes and logs in order to empower them to be self reliant and responsible for their own learning as well as enabling them to understand the learnt material better when they reflect on what they have learnt. Students documented their lesson notes but with some difficulties at the start and whenever they needed references and my assistance I gladly offered my assistance and some references whenever possible but in most cases they searched for their reading materials in the University library and department archives. During the process of learning by doing each student was given a chance to exercise and learn from direct engagement with the skill that was specified in their course content. The theory part would first be discussed in the group but the practical part was done individually. To enhance and encourage learning through reflection we used log writing and in class dialogue and feedback however, I came to realise that students did not easily cope up with the practice of log writing which made on rely mostly on use of in class dialogue and feedback. Students carried out all learning tasks in groups but documentation was done individually as a means of personal accountability of one's learning process. There was no specific criterion followed in forming the groups because the number of students was already small and thus students agreed to operate in one group. As regards leadership in the groups, students had already chosen their class leaders whom they agreed to continue with as their group leaders however group responsibilities like Charing discussion meetings, recording and presentation of group findings was rotational so as to allow each member to participate in one of the responsibilities at one point in the learning process.

In executing and implementation of the learner centred approaches mentioned above, I together with my students encountered a number of challenges presented under theme C which we tried to address amicably through our learning process throughout the entire research period. These challenges were pointed out during monthly meetings and in class dialogues with the students and they include:

Lack of adequate tools, materials and equipment for use at anytime the students wanted to do their practice. This was particularly a challenge to woodwork class which was due to the fact that most tools and equipment at the section of technological studies woodwork workshop were not in good working conditions. However with a collaboration with the technician at the department, this challenge was minimised which enables us to achieve our learning objectives.

There was also a challenge of students' lack of knowledge of what to note in their lesson notes and what to leave as they found out that almost everything was relevant. I attributed this failure to the nature of learning that the participants were accustomed to where they were given written notes from their teachers. This failure was also as a result of students having problems of English which made them to fear to write wrong sentences. With constant practice, encouragement and guidance as well as giving constant and immediate feedback on students' documents, students were able to write their notes. I encouraged students to always pay extra attention during lesson and group discussions and to listen actively so as to capture important issues and key points that are raised during their interactions with the teacher and in between themselves.

The idea of log writing became a challenging phenomenon due to the fact that it was a new practice and the majority students thought it was some form of assessment and thus feared to write issues that would earn them low grades. Some students revealed that it was time consuming and considering the workload they had they were not in position to have time to write logs. I personally attributed this kind of understanding of log writing due to lack of proper understanding of what a log is and its purpose much as we had discussed about it. I thus re-orientated the students into the practice and also informed them that it was not a form of assessment and thus would not be awarded any grade but instead it was meant to enhance their reflection about their learning. This kind of explanation resulted into another problem because after understanding that it was not part of their evaluation they decided not to continue documenting their learning experiences since it did not after all affect their grade. It is my submission that this attitude is due to the exam oriented nature of our education system where learning is associated to grades. In order to supplement this practice and to enhance students' reflection I concentrated on use of reflective questioning through in class dialogue to elicit students' reflection upon their learning experiences.

Some students portrayed some form of misconduct while employing group learning which was evidenced from some students' absenteeism during group discussions. Since this was also a new practice, it was expected that students may not easily cope with the practice. We discussed the merits of working together and students were made to realise that they lose a lot from dodging group meetings. Much as the participants had seemed to have understood the merits of group learning, complaints about students failure to attend and participate fully in group activities kept arising. To minimise the severity of the problem we agreed that some of the group activities would be done during the scheduled lesson time and individual presence and participation was mandatory. This improved the situation and I hope students were able to learn from one another. However it was very difficult for me to follow up and supervise them during out of class meetings

since they had no specific timetable for such activities but they only convened when they found it convenient for them to do so. I also encouraged all the students to exchange among themselves their phone numbers so that they can easily connect with and inform one another of where and when they are to have a meeting. This helped to reduce on the excuses that some students were giving for their absence for discussions.

Despite the challenges that were encountered in the process of implementing these learner-centred approaches discussed in theme B, I together with the teacher trainees managed to derive some learning from the process. A number of learning experiences for both the teacher trainees and me as a researcher and a facilitator of learning have been presented in section 4.6 above which gives me a satisfaction that my major aim of the research was somehow achieved.

CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0. Overview

In this chapter I discuss and analyse the results accruing from the story of actions and the learning process presented in chapter four of this report. This discussion and analysis of the results basically depend on my interpretation and description of the learning process which is based on my experiences, observation and reflection upon the situation as it unfolded in the process of research and also on the perceptions and views from the participants of this research. In this discussion I also incorporate related views, theories and concepts from various scholars where it is deemed necessary to back up my analysis of the results.

After discussing and analysing the results, I will also put down my conclusions based on my learning and understanding acquired through this research process and the recommendations which will portray the way forward for this research.

With the aim of improving my practice in facilitating students' learning process while using learner-centred approaches focusing on experiential learning and group learning, the problem statement that guided this research is: *How can I improve my practice as a teacher in facilitating students' learning process using learner centred approaches while working with the teacher trainees of technological studies at Kyambogo University?*

In the preceding chapter, I presented the story of action and the learning process in three major themes A, B and C following the objectives of this research. In this chapter, I will also discuss and analyse key results following the order used in chapter four above. The key results are those that are related to the questions of this research.

5.1 The challenges faced by teachers in VET institutions during teaching and learning process

Under this theme, I described the process of situational analysis where I presented the information obtained from my interaction with teachers at Nakawa and KyU as well as some key administrators in the department of Civil and Building engineering together with the views from an NCDC official. It can be seen from the results that there were a number of challenges and setbacks which either directly or indirectly impact on the effectiveness and progress of teaching and learning process in VET institutions in Uganda. The challenges which I am going to discuss and analyse in this chapter are based on the respondents' views and from my own observation and interpretation of the situation and are those that I have considered as key issues as they have a direct bearing on the learning process. They include:

- Lack of adequate tools, equipment and materials for practical vocational skills training
- Outdated and rigid curriculum
- Negative attitude held by the public and students towards vocational education
- Lack of close link with the labour market
- Lack of avenues for professional development

5.1.1 Lack of adequate tools, equipment and materials

The teachers' responses revealed inadequacy of tools, materials and equipment as one of the challenges faced in the teaching and learning process in most Ugandan VET institutions. Such a situation is a hindrance to the teaching of hands-on skills which is the core of vocational education. It is in my view that the availability of right teaching materials plays an important role in promoting the teaching and learning of vocational disciplines and carpentry in particular. I observe that VET- carpentry is a practical oriented discipline and thus its success depends on the availability of tools, equipment and other materials. Without such equipment and tools, training of hands-on skills will not be possible and consequently the quality of graduates of VET will be jeopardised. This is supported by Semwogerere (2010, p. 15) where he says that BTVET facilities and equipment currently in stock are insufficient and even those that exist may not be current to those where the graduates will be employed. He continues to say that it is common that for BRTVET trainees to be trained on limited obsolete or obsolescent tools and equipment which adversely affects the quality of training provided and indeed the quality of graduates.

This absence of materials and equipment was attributed to the high costs involved in the purchase of these items which makes it hard for students and even VET institutions to buy them. The teachers also indicated that the government has not put helped institutions much to acquire these materials due to the fact that the finances allocated to VET institutions by the government MoES through BTVET is very minimal and worse still the taxes levied on imports like machines and tools by the government is also high. This is also pointed out in the National Development Plan (Uganda, 2010, p. 209) where it is noted that current budgetary allocation is inadequate for the required expansion of service delivery in the education sector, to meet the projected social demand. The paper continues to say that this inadequate budgetary allocation makes it hard for the education sector to meet the current and emerging priorities in the sectors' departments like schools among others.

Of the little that is allocated to the education sector, the biggest part is used to promote basic education, UPE for example, at the expense of vocational education. Thus it is vital that the government reduce or even remove taxes on importation of tools and equipment for VET institutions and also increase the finances allocated for VET institutions. It is in my experience

that in situations where teachers improvise and try to teach practically using the little materials that they can afford to get, students are made to make models instead of real items. Much as this is a somewhat good practice, it is my belief that it does not bring out clearly the desired learning outcomes. Normally students are always motivated to learn when they practice and produce real items than when they just make models.

It is evident from teachers responses that the responsibility and blame for this was put on the government. However, it is my submission that though it is vital that the government plays its part, teachers too should try to take good care of and maintain the tools and machinery that is already at their disposal so as to minimise the severity of this challenge. From my experience, especially at the woodwork workshop at the section of technological studies at KyU, most tools and machines that I had personally used when I was a student had all broken down when I went for this research and it is my observation that this situation was due to poor maintenance and care as can be seen from the photos below which probably caused most of them to break down.



The Pictures above shows conditions in one of the woodwork workshop at Kyambogo University

As observed from the pictures above, dust was left in the working area, machines were left dismantled, working benches were mixed up with machinery, and virtually everything was messy in this workshop. Under such conditions it is obvious that tools and machines cannot easily survive.

5.1.2 Outdated and rigid curriculum

The results also indicated the challenge of curriculum being outdated as a result of it not being regularly updated to match the current situations. The curriculum followed in VET institutions, in form of examination syllabus designed by UNEB, does not necessarily match the current labour market requirements. This is also observed by Liang (2004) where he asserts that much of what is taught is a Ugandan adaptation of the old Oxford/London syllabuses of the 1950s. It is in my opinion that the needs of the society in Uganda today are very different from those of the Colonial Uganda of the 1950s. Thus the curriculum needs to be reviewed from time to time to match the ever changing needs and demands of the society and the world of work and also to match the changes in technology. This also necessitates carrying out an action research in education institutions so as to be able to know the current state of affair in the institutions and in the society at large including the labour market so as to develop a more relevant and up to date curricula for VET institutions. This is supported in the National development plan (Uganda, 2010, p. 214) where it is argued that without research in education so as to develop curricula for the entire education system, all the curricular will be of little relevance to the national development.

5.1.3 Negative attitude held by the public and students towards vocational education

The responses from teachers revealed that the public still consider VET as a form of education for academically weak and marginalised children from poor families that cannot afford to pay for academic secondary and tertiary education which is cherished by many in Uganda. It is believed by many people in Uganda that learning of vocational disciplines does not require high level of intelligence, and that learning a skill does not require a lot of thinking thus it is suitable for such students. This same issue is pointed out by Semwogerere (2010, p. 18) where says that there is a negative social perception and stigma among the public, including parents who consider vocational education and training as dirty work, fit for pupils and students who are academically weak which consequently makes BTVET graduates stigmatised for being looked at as failures.

From my experience I have heard many parents say, “My child did not perform well so I am going to take him/her to a vocational school to learn a skill”. This kind of attitude renders vocational education as a field of study for the academically dwarfs. This kind of attitude and belief consequently affects the students’ self esteem and confidence as they may consider themselves as failures in life and cannot do anything good for themselves. This is made worse by the fact that students who undertake vocational training find it difficult, if not impossible, to proceed to higher education as it is supposed to be in the formal education system which makes BTVET a dead end system of training. This consequently may affect the interest and motivation to learn for the students who may end up in vocational education.

Roy Killen (2007, p. 41) observes that for successful learning to occur learners must want to learn. This happens when learners are interested in the subject material being studied and are curious about it. This means that students need to have a positive attitude towards their school, teacher and the subject they are studying. Killen also asserts that learning is influenced by what learners believe about school and about learning itself. He gives an example that if learners believe that school is a waste of time they are likely not to learn (Killen, 2007, p. 3).

It is imperative that significant resources are invested VET public awareness, career guidance and counselling for learners, parents/guardians and the community so as to increase self understanding, self acceptance and commitment to skills development. Glorification and treatment of academic studies against VET studies should be addressed in policy and in practice.

Teachers also need to employ various learning methods that can motivate learners and increase their esteem, interest and confidence in a bid to change their attitudes towards vocational education. Through such methods students will realise that they are important and valued after realising that they can employ their gained knowledge and skills to produce valuable items for use in the society. To ensure this, it implies that teachers and instructors must be transformed from those who impart knowledge to those who facilitate learning. This is supported by Semwogerere (2010) where he observes that in order to improve skills training in Uganda, it necessitates changing the didactic rote learning heritage of BTVET to an experiential and facilitative approach by teachers and instructors. Emphasis should shift from procedural learning and manipulative practices to knowledge understanding and application. Semwogerere (2010) also suggests that to attract parents' support and motivate students to embrace VET there is urgent need to enhance the status and attractiveness of skills development and to ensure incorporation of ICT to make graduates multi skilled and highly competitive in the current labour market. It is my submission that this should go hand in hand with provision of computers and installation of electricity at all VET institutions.

5.1.4 Lack of close link with the labour market

It was also noted that teachers hardly have links with the labour market. This lack of close link with labour market probably makes it hard for teachers to know the labour market requirements and thus what they teach in schools may not match what is required by the labour market which may also result into diverse consequences. It is my opinion that in order to improve the relevance of VET, it is vital to have a close link between institutions and the community so as to be able to harmonise what is done in schools and what is needed by the labour market and society at large.

This idea is supported by the World Bank where it points out in its document²⁶ that VET training can be useful if it is based on knowledge of local market conditions and skill requirements. It however observes that most managers and instructors (teachers) in such institutions often lack this information and thus the training provided by them is poorly linked to the realities of self employment. This same challenge is also highlighted by Semwogerere (2010) where he says that labour market information system in Uganda is poorly developed and thus there is always inadequate information on labour market demands and social needs to guide training and recruitment which leads to unnecessary production of skills that may not have effective demand.

Teachers revealed that the only link that exists between schools and labour market is the industrial training or school practice (in case of teacher trainees). Students are sent in the companies and schools to practice and learn from the work places especially at the end of training in schools. It is my submission that though there is this connection with the workplace, there are always no trainers in the companies to train these students and therefore they may not learn much from companies. Atchoarena and Delluc (2002) argue that if learning from enterprises is to give young people a true immersion experience in the company, careful organisation of in firm practical training and supervision of trainees is also required.

Teachers play a vital role in training of high quality labour force through VET therefore they need to have firsthand labour market/ industrial experience. As noted in the results, however, most teachers in Ugandan VET system have little or no contact with the workplace and thus get little or no information and knowledge regarding new technologies and skills that are always required of their students when they enter labour market. This lack of such current information from the labour market renders teachers to teach only what is specified in the curriculum or in the syllabus which may not necessarily enable the graduates to meet the labour market requirements. This is also pointed out by King and Palmer (2010) where they argue that the lack of data on the demand side (what skills are being demanded by the employers) creates information asymmetries in the skill-industry relationships and ultimately skill mismatches. These authors continue to argue that skills in isolation do not make a difference, there needs to be an enabling environment for their deployment which necessitates a close link between Vet schools and the world of work.

Lindgren. A and Heikkinen.A (2004, p. 191) also appreciate the idea of VET institutions and teachers linking up with the labour markets where they argue that by engaging local enterprises in the education, the relevance of its content is vouched for and consequently the students' possibilities of employment are being increased. Based on Lindgren and Heikkinen's argument it

²⁶ Retrieved on 13th October 2011 from <http://www-wds.worldbank.org/>

can be argued that there is need for a close link and collaboration between VET institutions and the world of work so as to increase the relevance of what is taught in school and, in a way, create opportunities for employment for their students.

Adams (2007,4) cited by King and Palmer (2010) also asserts that good quality VET that is closely linked with strong employment growth and aligned with the skills in demand in the labour markets can pay off for the youth. This means that VET institutions must collaborate with companies and enterprises so that their students can be given a chance to practice from those companies to enhance their skill applications in real life situation. Moreover students learn not only application of skills in workplaces but also social interaction and other knowledge through experiences of the workplace.

Cedefop in its review document on initial VET in Europe²⁷ also observes that to increase the attractiveness and prestige of VET we have to improve its quality and responsiveness to the labour needs. This necessitates that teachers are aware of the labour market demands and requirements so that they organise and teach the content in a manner that allows students to acquire the necessary skills so as to be able to meet the demands of the world of work.

5.1.5 Lack of avenues for professional development

Another challenge that teachers highlighted is lack of training/educational programmes to enhance their skills and knowledge. It is my submission that the effectiveness of the teachers in the learning process greatly depends on his knowledge, skills and understanding of the subject matter and pedagogical approaches. The Copen Hagen declaration on enhanced European cooperation in VET²⁸ concurs with this argument when it states that “the quality of VET systems is closely linked to the quality of VET teachers and trainers, and hence the quality of their initial education and their continuous professional development throughout their career”.

This means that VET teachers need to be well trained and equipped with the knowledge and skills and to continuously update their skills and knowledge as they change. From the teachers’ responses it was revealed that even when there are opportunities for joining institutions of higher learning; it is sometimes very expensive for them in terms of tuition. It is my submission therefore that the government should extend professional development programmes to VET teachers at reduced or even at free cost so as to enable them to keep abreast with the current knowledge, skills and technology which they are expected to impart to their learners. This will not only improve

²⁷ http://www.cedefop.europa.eu/EN/Files/IVET_Review_08.pdf

²⁸ Retrieved from http://www.kslll.net/Documents/EAC_B5_PLA_leaflet_EN_280909_bis.pdf

teachers' professionalism but also improve the relevance of the entire VET system to the needs of the society in Uganda.

5.2 Learner centred approaches and the teaching learning process

In this section, I discuss and analyse data that culminates from the story of actions undertaken in the process of implementing learner centred approaches in the learning process of teacher trainees of technological studies at KyU. Learner-centred approaches to teaching have emerged from changes in understanding of learning and knowledge creation and more particularly their origin is deeply rooted in the constructivism theory of learning. In broadest terms, constructivist learning is based on the understanding that learners construct knowledge for themselves. The principal implication of constructivist understanding of how knowledge is created is that students are the key initiators and architects of their own learning and knowledge creation rather than being passive vessels who receive the transmission of knowledge from expert teachers (Barraket, 2005). Therefore learner-centred teaching strategies emphasise that knowledge is constructed and that teaching should focus on the learner's understanding rather than memorisation of information in form of facts (Killen, 2007).

Tan argues that pedagogy in this 21st century characterised by information explosion and accessibility, rapid proliferation of technology, globalisation and demand for new competence requires going beyond making content and teachers thinking visible. Good pedagogy today is about making students thinking visible and the challenge of education thus is to design learning environments and processes where students' ways of thinking and knowing are manifested in active, collaborative, self regulated and self directed learning (TAN, 2006, p. 5&6). This thus calls for making a shift from teacher centred nature of teaching where learners are passive recipients of information from teachers to learner centred approaches where learners are the initiators and constructors of knowledge.

Catherine Fosnot(1989) cited in (Johnson & Johnson, 1999, p. 15) also appreciates the use of learner centred approaches to learning where she argues that real understanding is a case of active restructuring on the part of the learner which occurs through engagement in problem posing as well as problem solving, inference making and investigations, resolving of contradictions and reflecting. These processes all mandate for more active learners as well as different mode of instruction. Rather than being powerless and dependent on teachers learners need to be empowered to think and learn for themselves thus learning needs to be something that a learner does but not something which is done top the learner hence need for learner centred strategies in learning process.

As already highlighted in chapter four of this report, the main focus was on the use of experiential learning with main emphasis on learning by doing and reflection as well as group learning. I will discuss and analyse results from theme B and C for each strategy employed concurrently to ensure coherence and systematic flow of information and arguments from the story of actions.

5.2.1 Experiential learning with emphasis on learning by doing and reflection

A reflection on my experiences garnered from my study as a master student at HiOA compelled me to extend the same kind of learning experience to the teacher trainees at KyU. This was also enhanced by my experiences as student and teacher in Uganda as well as teachers' responses from the situational analysis which reflected a realisation of the need for students' active participation in their learning process. Teachers believed that encouraging students to engage actively in the learning tasks help to motivate them and to enable them to acquire knowledge and skills that they can effectively put to use when they later join the world of work an idea that I agree with.

Throughout this master programme at HiOA, my learning has been through engaging actively with the learning tasks and documenting of my learning experiences as well as making reflections upon my experiences in connection to my previously acquired experiences. Through this kind of learning I would try to assimilate and accommodate the new acquired knowledge into my previously acquired knowledge and experiences in relation to my practice as a teacher in order to improve what I am doing. My understanding of experiential learning was also enhanced by the various studies that carried out in the first year of this master programme where I visited a number of vocational schools in Norway to find out how they operate in the learning of vocational disciplines with focus on carpentry. I observed that learners were actively involved in the planning and executing of their learning activities either individually or in groups and they would finally document their learning experiences encountered during the learning process. Students were also involved in the evaluation and assessment of their work in collaboration with their teachers which enabled them to receive timely feedback and also to set their standards of their work which they expect to accomplish in a bid to improve their learning outcomes.

Reflecting on these experiences and my own learning experiences in my study at HiOA, I found it imperative to extend the same experience in my practice while facilitating the learning process of the teacher trainees at KyU. This approach was intended to encourage and empower them to be responsible for their own learning by actively engaging in their learning tasks, sharing their experiences, reflections as well as ideas and views from the learning tasks. This kind of learning is advocated for by Dewey (2007) who asserts that in the learning where children are engaged in doing things and in discussing what arises in the course of their doing it is found, even with

comparatively indifferent modes of instruction, that the children's inquiries are numerous and spontaneous and the proposals of solutions they advance are varied and ingenious.

From my various projects that I engaged in during my first year at HiOA, I learnt that learning occurs when new information is interpreted from the known; the concepts one already comprehends determine what one can fathom and grasp. Knowledge, skills and attitudes develop in the interplay between old notions and new impressions. Education should therefore be tied to the pupil's own observations and experiences. This includes both experiences gained from the community, their local dialect, and the common impulses gained from the mass media. As Herbart (1898) one of the first theorists cited by (Pucel, 2001, p. 6) points it out clearly, for persons to truly understand and be able to use the information learnt, they must be able to integrate it in their dome of experience-in the context they understand and have experienced. This is also supported by Ausubell and Illeris (2008) cited by Bjerknes (2002, p. 7) where they point out that the most important element in learning is what you know from before where they explain experience as a subjective awareness of the present situation. This implies that the meaning of one's' current experience is partly determined by past individuals learning (Bjerknes, 2002, p.8).

Based on such background, I believed that by employing experiential learning in the learning process would enable the teacher trainees to make connections between what they knew before and what they were learning quite easily which would eventually lead to better understanding of the concepts studied and hence learning. I also thought that it would enable me as a teacher as well as the researcher to develop my understanding on how this approach can be effectively and sustainably employed in Ugandan context in a bid to make shift from teacher-centred teaching to learner centred teaching. In order to implement this approach, we tried to adopt documentation of lesson notes, learning by doing and learning through reflection with emphasis on log writing, reflective questioning and dialogue. I was optimistic that by exposing this kind of learning to the teacher trainees would also create in them a desire to adopt the same approach in their practice when they too start facilitating students learning which could bring about sustainability of the approach.

5.2.1.1 Documentation of lesson notes

From my experience as a student and as a teacher in Uganda, giving of readymade information in form of written notes and handouts has been a common practice in the learning process. This, as far as I understand, makes students to think/believe that what the teacher gives is the sole truth and therefore they are obliged to memorise it so as to be able to reproduce it in the examinations. It is my submission that effective learning does not occur by only memorising the content but

instead occurs when the learner has fully understood the essence of learning it or when they actually derive meaning from what they learn easily and can apply the knowledge and skills learnt to solve real life problems.

This is supported by Mjelde where she argues that learning should not be seen as anything that happens inside a student's head when he/she listens to a teacher or reads a book but should be known as to be fundamentally interactive (Mjelde, 1993, p. 19). Mjelde notes that learning is the internalisation of the schemata which incorporate cognition, perception and action and that these schemata are made meaningful by jointly carrying out activities by an expert (teacher or trainer) in such a way that the learner gradually masters successfully more different parts of the task until he/she can be able to take over more complex stages without the needs an expert to assist him/her. Killen (2006) also observes that learning is not just a passive process of simply receiving information; rather it involves deliberate progressive construction and deepening of meaning.

In order to empower students to engage in deep learning of their subjects I encouraged them to document their learning points from the lesson discussions as well as from their group discussions outside class hours which they can reflect on or even share with their colleagues in order to enhance their understanding and consequently improving their learning. This would eliminate the practice of memorising of lecture notes given by teachers without students internalising them for the sake of reproducing them in examinations and also to improve students' English and writing skills. The teacher trainees chose to discuss in groups but documentation was done individually. I agreed with their idea since I personally consider individual involvement in learning tasks as a way of creating within each individual learner a sense of responsibility, accountability, self confidence as well as curiosity and motivation towards learning and self discovery- essential aspects in one's learning. To increase learning group effectiveness it was necessary to emphasise both positive interdependency and individual accountability, thus I found it justifiable to allow students to discuss in a group but do documentation as individuals.

Johnson and Johnson (1999) also appreciate the use of individualistic learning where they assert that the purpose of individualistic goal structure is for students to attend to a specific task and master it to their own. The two authors argue that establishing an individualistic structure would enable students to learn specific information or simple skills which are to be subsequently used in cooperative learning situation (p.155). This is also supported by Dewey (2007) where he points out that excessive reliance upon others for data, whether got from reading or listening is to be depreciated.

In the initial stages of this practice, the teacher trainees and I discussed the benefits of making personal notes. This was to ensure that they are well conversant with what they were expected to do so as to minimise the chances of retaliation. This is supported by Felder.M and Brent (2003, p. 283) where they suggest that it is vital when trying to implement a new approach in the classroom learning that a teacher explains whatever is to be involved in the learning process and why in that this explanation helps to defuse resistance that some students may feel towards the new approach being implemented. I emphasised that individual students' participation in the learning process was of paramount importance towards note taking and making. I also highlighted that the descriptions and explanations given to their notes taken will depend on how they understood the concepts and how they find them relevant to their experiences which they might have acquired previously or within the learning process

It should be noted that although the teacher trainees accepted and tried to document their lesson notes, this process did not go without challenges. At the start, students were confused on what they should write and what they should leave out. It is my submission that getting used to self initiated and self directed learning is a challenge especially to learners who are used to being given notes and told what to do, when and how to do it. This was the same experience which I personally encountered when I was first introduced to this practice at HiOA. Because I was used to being given handouts during my studies at Bachelor level, I thought it would be the same case while pursuing my master degree which was not the case. The start was a little bit challenging as I was expected to be responsible for every learning activity with minimal assistance from the mentors. It took me time to get used to the new way of working.

It is my observation therefore that the challenge that teacher trainees faced in documenting their notes is attributed to the dominance of teacher centred approach usage in learning process which renders learners passive recipients of the information from their teachers which I believe hinders their creativity and critical thinking which are vital attributes of effective learning. To minimise the gravity of this challenge, I encouraged the teacher trainees to listen more carefully and be attentive so that they can be able to capture the most important issues during the lesson and group discussions. I also encouraged them to compare their notes so that each student could learn from one another and enrich ones notes basing on others notes. To help them to enrich their notes, we always had to start every lesson with the review of the previously learnt tasks so that each student could be able to pick key issue which he or she could have missed.

From this experience, I realise that learning is a process and is consummated by motivation and encouragement both from within the learner and from the teacher. It is a process in that it does not occur spontaneously but rather occurs bit by bit, slowly by slowly. In other words it takes time for

it to manifest. Vosniadou (2001) observes that learning is a complex cognitive activity that cannot be rushed. She says that it requires considerable time and periods of practice to start building expertise in an area being learnt. This implies that learners need to be given enough time and to be constantly encouraged to learn by doing so that through trial and error they will eventually learn. This is in line with Dewey's argument where he says that to learn from experience is to make backward and forward connections between what we do to things and what we enjoy or suffer from them in consequence. (Dewey, 2007). This is also supported by Felder.M and Brent (2003) where they point out that the only way a skill is developed-cooking, critical thinking, writing, technical skills ... is practice. Trying out something, seeing how well or poorly it works, reflecting on how to do it differently, and then try it again to see whether it works better.

Diana Laufenberg also says "The main point is that, if we continue to look at education as if it's about coming to school to get the information and not about experiential learning, empowering student voice and embracing failure, we're missing the mark... learning has to include an amount of failure, because failure is instructional in the process." Thus through constant encouragement and guidance that I offered to the teacher trainees throughout the research process and by allowing them to learn by doing, through trial and error I was able to observe some improvement in note making in that students could write their notes and use them as references whenever they were given an assignment.

5.2.1.2 Learning through practical experience

Pucel notes with concern that most learners are not able to take the content taught in an abstract fashion and apply it in their work and lives. He says that students need to be taught in ways that make application of what they are learning explicit and they need to practice applying the content to real life situations (Pucel, 2001, pp. 5-6). He believes that such education has an impact on motivating students to learn. He continues to say that education that concentrates solely on the mastery of disciplines provides little motivation for students to learn since learners cannot easily see their applicability in the real life situations. I concur with Pucel's argument because most students, if not all, usually attend to things they feel are relevant and which they see as useful

Learning by doing was adopted to ensure that teacher trainees acquire necessary skills and knowledge in the subjects that I was facilitating them which they can easily apply in the real life service. From my own experiences, every skill that I possess now be it cooking, knitting, woodworking, name it, was learnt by doing it. Most of the skills that I put to use in my day to day life were not necessarily learnt from school but rather through engaging in the activity either with friends who already knew it, or from any elder that possessed the skill I was interested in. Thus, I

found it imperative to allow my students to learn from their actions, through trial and error so as to get concrete experiences which enhances their understanding.

It should be noted that human cognitive development involves just as much ‘body knowledge’ as it does ‘mind knowledge.’ Chilean, Humberto and Varela cited in (Senge, 2000) appreciate the notion of learning by doing where they argue that learning is inseparable from action. According to them “All doing is knowing and all knowing is doing.” Thus it was important that the teacher trainees are encouraged to put the knowledge learnt into action by engaging in practical activities specified in the scope of their study in which I was trying to facilitate them. This is supported by Vosniadou (2001) where she argues that learners must carry out a great deal of practice to be able to acquire expertise in an area of study. As already explained in chapter four section 4.4.1.2 students of different groups participated in different activities that were aimed at enabling them to learn from practical engagement with the task at hand.

Through this kind of learning learners would be enabled to experience and discover certain aspects and insights into the subject they are learning which would otherwise be difficult or even impossible if they only learnt about it. This is what Bjerknes (2002) calls learning discovery. Learning by discovery in this sense implies to discover meaning both in professional and contextual matters as well as related to ones’ own existence. Learning by discovery challenges learner’s past knowledge, understanding and experiences which in turn creates within him or her anxiety to learn. In other words learning by doing is one way to motivate the learner to learn and be focused in the learning process. Bjerknes (2002) argues that knowledge exists in action not in theory; that one learns by doing, discovering, reflecting and by integrating what one has brought about Dewey (2007) notes that an ounce of experience is better than a ton of theory simply because it is only in experience that any theory has vital and verifiable significance. He argues that an experience, a very humble experience, is capable of generating and carrying any amount of theory (or intellectual content), but a theory apart from an experience cannot be definitely grasped even as theory. Felder (1993) also believes that true skill development only occurs through repeated practice and feedback. Reflecting on these ideas from different scholars made me to realise a need for implementing this kind of learning in my practice during this research process.

From my experience in Ugandan vocational education, teaching of vocational disciplines concentrates much on the theory than practice which I believe is a stumbling block to skill acquisition and development. It is my belief that through learning by doing, students are offered a chance to practice and learn from their experiences encountered during the practice. This does not only yield into competent graduates in terms of manual skills but also in critical thinking and self independence which are the basic attributes of any VET graduate. As pointed out by Felder.M and

Brent (2003), when students complete a task all by themselves they own the knowledge created as a result of doing the task in a way they never would from just watching the lecturer do it.

The main challenge with this kind of learning, however, occurs when there are no materials and tools to facilitate practical learning. This was experienced in the implementation of this approach to teaching, but we had to improvise and use the little materials we could afford to get. This being a challenge that most VET institutions cannot easily handle, it necessitates the government intervention by either increasing the funding given to these institutions so as to be able to purchase more tools and materials or by providing these institutions with the necessary equipment, tools and materials.

5.2.1.3 Learning through reflection

Learning through reflection was one of the ways I thought would help teacher trainees to make a back and forth connection between what they were learning and their past experiences and knowledge so as to be able to understand and derive meaning from what they learnt. As it is observed by Dewey (2007, p. 75), no learning can take place when the experience acquired in the learning process is not reflected upon because it will totally be meaningless and thus will be taken as something that has happened by accident. Vosniadou (2001) also argues that reflection helps learners to be able to distinguish appearance from reality, beliefs from scientific knowledge etc. Reflection involves thinking for an extended period by linking recent experiences to earlier ones, in order to create a more complex and interrelated mental schema (Clark, 2011). This thinking also involves looking for commonalities, differences, and interrelations beyond their superficial elements and the main goal is to develop higher order thinking skills.

I encouraged learning through reflection throughout this research period in order to empower students to make connections and think critically upon their learning process and on the content they were learning. This practice took the form of reflection in practice as also known as reflection in action (Schön, 1983) and reflection on practice. I found it imperative that participants understood by what it means by reflection and why should we bother with it. So to accomplish this I asked students in both groups (at different times of their lessons) to explain what they understood by the term reflection. I was convinced that if they were able to explain what it meant they were also able to know why it is important in ones learning.

The two groups came up with different explanations but which were closely related (for details see section 4. 4.1.3). From their explanations of reflection, it can be seen that they knew why it was important for them to carry it on in their own learning. In trying to adopt this strategy, I together with the teacher trainees agreed on two techniques to be used which were: use of

dialogue and keeping personal logs. These were aimed at enabling students to express their views either verbally or in writing so that their ideas are held up for scrutiny in company of the group members and me. These methods of enabling reflection are supported by Vosniadou (2001) where she says that reflection can develop through discussions, debate, dialogue and essays where children are encouraged to express their opinions and defend them.

Reflective log writing

Having realised how a log can help to keep track of my own learning at my master study at HiOA, I found it necessary to introduce the idea to my participants so that they can be able to document their learning experiences and reflect on them to enhance their understanding and learning. This idea of log writing is supported by Johnson and Johnson where they argue that logs and journals help students to document and reflect upon their learning experiences (Johnson & Johnson, 1999). Gibbs (1995) also asserts that logs, journals and diaries are often used in conjunction with other methods associated with experiential learning to record learning activities and experiences and to encourage and capture reflection on experiences and develop students' ability to learn through reflection. I adopted log writing to enhance students' ability to reflect on their learning experiences. It was crucial that the teacher trainees reflect upon the content covered in their respective subjects and the experiences encountered in the process of interacting with one another so as to be able to note down something in their logs in regard to what has been learnt or the created knowledge. I was optimistic that through sharing of logs, the teacher trainees would be able to learn from one another. Because the act of reflection involves thorough thought and analysis of the item of concern, it enables a person to develop critical thinking skills and also to widen his or her repertoire of knowledge. This is supported by Kolb (1984) who argues that the dimensions of experience and concept, reflection and action form the basic continua for development of an adult.

Though the teacher trainees had seemed to have appreciated the idea and had agreed to keep logs, it is from my observation that most of them did not write them. It was also uncommon for those who had tried documenting their logs to share them in class. Because students had understood it as some kind of assessment, it could be that they feared to write some stuff that would earn them low grade or since they are used to individualistic and competitive nature of learning, they might have thought that their colleagues would copy from them and get more marks than they would get. Other might have feared to share their logs because of the difficulties in expressing themselves in good written English thinking that their group members might laugh at them.

I basically attribute the trainees' perception of a log to the examination oriented nature of Ugandan education system whereby whatever the child documents is usually some form of an assignment aimed at grades and marks. It could also be attributed to the fact that they were encountering the idea and practice of log writing for the first time and they did not understand much about it even though I had tried to relate it to the use of journals and diaries in the day to day life which was a familiar case to them in our first meeting. This made me to realise that whenever a new idea or concept is to be introduced to learners experiencing it for the first time, it is necessary to give it due explanation so that learners are able to integrate it in their dome of previously acquired knowledge either through assimilation or accommodation process. This is advocated for by Piaget cited in Kolb (1984) who argues that the key to learning lies in the mutual interaction of the process of accommodation of concepts or schemas to the experience in the world or the process of assimilation of events and experiences from the world into the existing concepts or schemas.

After realising that there was a misconception about the idea of log writing, I reassured the students that a log was not any form of assignment but was meant to help them to take note of and to reflect upon their learning experiences them so as to be able to understand the learning concepts and content better. It is from my observation, however, that after realising that it was not an exam and would not be graded, even those that had tried to write them decided not to bother with the practice again. This could be due to the fact that they took it as something secondary and would not take much of their time after all it will not affect their grade. This is also identified by Felder and Brent (2006) where they argued that most students especially at University level barely have enough time to keep up with their assignments; they don't have time to dig deeply into everything in all of their courses and in case they are sure that something requiring effort on their part to learn won't count toward their grade, most won't bother to learn it. As Peter Senge (2000) observes, learning does not occur in any enduring fashion unless it is sparked off by the learners own passionate interest and curiosity to learn. This requires that a learner knows and sees where he or she wants to go and assess where they are. In cases where such conditions are absent it makes their learning of any aspect a hard nut to crack.

On realising that log writing was becoming a serious challenge, I decided to put more emphasis on use of dialogue so as to elicit their reflection by using reflective questioning technique. This is not to say that I totally ignored the idea of log writing. I kept encouraging students to write their logs hoping that they would adopt it as they continue to learn how to go about it. Though most students did not write logs, I still have a feeling that what they learnt about it built a foundation from where, if given another chance, I will be able to start from.

Use of dialogue to enhance learning through reflection

Dialogue with the students during class lesson and giving of feedback on students work was also another way that I employed with the students to ensure learning through reflection. Lee.V.Ginny and Barnett.G.Bruce (1994) observe that one powerful form of reflection occurs when educators engage in professional dialogue with each other in small groups. I thus employed dialogue with the participants (students) in order to enhance their reflective process by using specific questions targeted to ignite insights into what they did and how they did it so that they may be able to derive meaning from their experiences. Lee.V.Ginny and Barnett.G.Bruce (1994) also argue that reflective questioning creates opportunities for individuals to reflect aloud, to be heard by one or more colleagues and to be prompted to expand and extend thinking through follow up questions. This is one of the reasons why I found this technique very important for use in this study. In the process of dialogue I commonly asked the teacher trainees various questions which targeted at eliciting their reflection upon their experiences from the activity done. Such questions included among others:

- How did you feel when you were engaging in the actual practice in the workshop?
- What new thing did you learn from your practice?
- What challenges did you meet?
- How did you manage to finish your assignment?
- What do you think you can do to improve on what you have done?

In trying to get answers to those questions the teacher trainees would be necessitated to dig into their inner persons, to think out loud their inner feelings thereby reflecting on their experiences and consequently their understanding of their experiences would be enhanced. Each student would then present the answers which were followed by receiving of feedback in terms of comments and suggestions from me, the facilitator and fellow group members.

This practice is advocated for by Donald Clark (2011) who notes that carrying on a dialogue with one or more learners about their work is probably the ultimate in promoting reflection via feedback. He says that although feedback that enhances reflection can be provided via written comments, they are probably more powerful when used interactively in interpersonal dialogue. The research carried out by Hatton and Smith (1995) cited by (Clark, 2011) indicates that engaging with another person in a way that encourages talking with, questioning or confronting helps the reflective process by placing a learner in a safe environment in which self revelation can take place. These authors continue to argue that through reflective dialogue students are able to distance themselves from their actions, ideas and beliefs by holding them up for scrutiny in the

company of peers with whom they are willing to take such risks. Reflecting on of Clark's assertion and that of Hatton and Smith's, the use of interpersonal dialogue with the teacher trainees in this research process was justifiable.

The use of dialogue with the teacher trainees not only helped me as their facilitator to know what they had gone through and their feelings about the process but also helped them to reflect on what they did and the challenges they encountered. Through this practice teacher trainees would be able to evaluate their progress in their work. I always asked each one of them to think of the way forward and write down what each one was going to do to improve on what they had done. I also kept on encouraging them to note down their reflections that they have pointed out in class in their personal logs so as to act as their reference points which I came to find out that they never did. I actually used this method as a means of eliciting students' reflection and also to help me to evaluate the learning process and the effectiveness of learner centred approaches that I had employed in my teaching since I could hardly access their logs so as to be able to enrich mine in relation to theirs.

5.2.2 Group learning

I employed this approach with an intention to encourage and enable the participants to be actively involved in their learning collaboratively so as to develop interpersonal and communication skills which are necessary for their service in the world of work. I assumed that this would make them self reliant and be able to hold themselves countable and responsible for their own learning. Instead of passively and idly waiting for me to do all the teaching while they are listening, I believed that through group learning they would be able to organise themselves in their groups and carry out learning tasks even when I am not around. In this case learning would take a different style from being teacher centred (a common phenomena in Ugandan schools) to learner centred where learners are actively engaging in the construction of their knowledge in collaboration with others.

From my own experience, I found participating in group activities motivating and the more I discussed a given concept for others the more I could understand it better. I remember at my undergraduate level I, together with my two colleagues formed ourselves into a learning group from which we would discuss about the learnt content and any assigned learning task. Each member researched upon the task at hand and we met to discuss and harmonise our understanding. I found such learning very enjoyable and less difficult since we had to join our thoughts and ideas so as to be able to come up with a common understanding. This approach to learning is supported by Felder and Brent (2006) where they argue that allowing students to learn from one another in a group enables academically weak students to get a benefit of being tutored by stronger classmates

while the stronger students get deeper understanding that comes from teaching something to someone. Adam Waxler (31st July 2008) also observes that most students learn better with one-to-one interactions or in small groups where they can follow the conversation better and indicate where they don't understand. This is because peer interactions that take place during learning group activities make use of peer language which is generally less complex than that of a teacher which gives all students a chance to actively participate and try their own ideas in a small group setting. Peter Senge (2000) also appreciates this kind of learning where he argues that much as in team learning people maintain their individuality; their efforts will naturally follow a common direction. He maintains that people using team learning waste less time and effort to reach a common goal because they understand each other more completely.

Through group discussions with my colleagues I was able to learn more about building construction, structural analysis and other construction related subjects from one of the members that had studied Civil Engineering at diploma level. While working in a group, I experienced a free learning environment where I could freely talk and ask a number of questions which could not be possible when in the whole class, after all lecturers had little time with us. In most cases I could easily understand my colleague's explanation in some aspects better than when it is given by the lecturer. Therefore by adopting this approach, I wanted to create a free learning atmosphere for my students where they could easily interact with the learning tasks among themselves so as to be able to understand it better. Through this, they could freely express their ideas and correct their misconceptions in relation to ideas given by other members in the group which they could have otherwise not been able to do when the teacher is around.

From my experience I realised that group learning promote higher level of interaction and sharing of ideas and reflections upon the learnt subject which helps individual learners to encourage and facilitate each other's efforts to learn. This is supported by Weimer (2002, p. 220) who assert that learning groups give students the opportunity to discuss problems raised in the course, to read and comment on written work of others, to help and tutor each other by working jointly on the course materials, to test each other's knowledge, to share the cost of expensive and optional course texts and to learn how to work cooperatively with peers. With this kind of background I felt it was necessary to extend the same experience to the teacher trainees. It is my belief that the experiences acquired by the teacher trainees while working in groups will be a starting point for them to adopt the same strategy in their own practice as future teachers. Harris and Cullen (2010, p. 3) observe that in learner centred approach to teaching and learning individuals rely on one another, support one another and learn from one another and since this research project was aimed at trying out

learner centred approach in my practice while facilitating students learning it was imperative that I use group learning to enable learners to support and learn from each other.

5.2.2.1 Criteria for group learning formation

As already mentioned in chapter four, there was no specific criterion that was followed in forming learning groups in the two classes (year one and year two) whose learning I was trying to facilitate. The groups were formulated depending on the situation that prevailed in the classes. The participants argued that since the class numbers was already small there was no issue in splitting it again. This study being an action research where democracy is highly valued, I agreed with what the students suggested thus we operated as one group for each class. Guided by Johnson and Johnson (1999, p. 21), I understood that what determines group productivity is not what its members are but rather how well the members work together. Having that in mind I did not bother a lot with the group formation issues and what I minded about most was how we can effectively work together to achieve the learning objectives together.

The groups were heterogeneous in nature in that the members that formed them were from different backgrounds (both family and academic), had different learning abilities and interests however much they were of the same sex i.e. the 'year two' group was entirely made up of males while that of year one comprised only females. I found working with such groups a bit complex but very interesting since different students had different past experiences and were capable of coming up different ideas, opinions and arguments based on their experiences which I feel was a very important resource to their learning. I also found working with a small group very fundamental in the effectiveness of group learning in that it was easy for me as a facilitator to easily identify each group member's contribution towards group activities and the difficulties that the teacher trainees were having in working together. The idea of working in small groups is supported by Johnson and Johnson (1999, p.20) where they assert that when working with small groups it is easier to identify any difficulties that students have in working together and it is even difficult for students to hide and not contribute their share of the work. They continue to argue that problems in leadership, unresolved conflicts among group members, issues over power and control, tendencies of students sitting back and waiting for others to complete work as well as other problems that students have in working together are more visible and apparent when working with a small group. Small groups increase the visibility of students' efforts and thereby make them more accountable thus groups need to be small enough to ensure all students are actively involved and participating equally.

5.2.2.2 Leadership in the groups

As already noted in chapter four, I did not participate in the choosing of group leaders in the two groups. The participants had already chosen their class leaders by the time I met them in our first meeting, whom they decided to continue with while working in the groups. However I emphasised that all members of the group were responsible for group activities including chairing of discussions, presenting of group findings after discussion and recording of group findings.

There were no specific/definite rules and regulations that were set for the operation of groups because students felt that they could exercise their sense of discipline and responsibility to respect others in the group during group discussions and also in organisation and execution of group activities. I chose to respect their view but I emphasised that attending and individual participation in group discussions was mandatory for every member. Group responsibilities were rotational in a sense that if one member of the group chairs the discussion in one session then in the next session he/she had to take up another role giving others a chance to do the same. I tried to encourage each member of the group at one point during the entire research period to carry out one of the activities mentioned above. Such kind of operation I believe creates in each participant a sense of responsibility and belonging thus ensuring the effectiveness of the group. This equal participation and leadership is supported by Johnson and Johnson (1999) where they assert that it ensures all members are invested in group activities, are committed to implementing group decisions and are satisfied with their membership.

It is from my experience that where there are no rules governing group operations there may be tendencies of misconduct such as neglect of group activities, absenteeism among others. Some members may tend to attend the group meetings only when it is most convenient for them to attend or when what is going to be discussed is of their interest. I kept encouraging participants to observe and go by the agreements reached by the group much as there were no rules. Most students tried to observe the agreement, however, some students did not as evidenced from students' complaints. Some members were not participating fully in group activities as they sometimes would absent themselves whenever group meetings were to be convened. My duty as facilitator in such situations was to always intervene to guide them and where possible do some one-on-one guidance and counselling to students who were showing such unacceptable behaviours. I encouraged students and advised them on how they can go about the challenges they meet in working together.

I encouraged them to have their group members' phone numbers and also to know where each and every member in their group was residing so that they could easily communicate among

themselves. We also agreed to carry out some of the group activities during the scheduled time for lesson when I am also around. This improved on the level of attendance since most students were always present for lessons which made them readily available for group activities that we organised in lesson time. This meant that attending group discussions was mandatory and this did not increase students' level of attendance but also increased learner participation in the group tasks which consequently made them to benefit from one another and also to acquire some group learning skills.

Throughout this research period, I realised that when a new idea is introduced in the learning process, there is need for the teacher to always be there for learners to guide, direct, to facilitate and to encourage them so as to be able to assimilate or accommodate the new idea. This is because learning is a process and therefore it needs constant practice and encouragement so as to go on. I kept on encouraging and advising the teacher trainees as well as emphasising that they continue working together as it was for their own benefit. This is supported by (Johnson & Johnson, 1999, p. 31) where they point out that having students to practice a skill once or twice is not enough. The teacher needs to keep emphasising a skill until the students have integrated it into their behavioural repertoires and are able to do it automatically and habitually.

5.2.2.3 Working in the groups

As already indicated in chapter four, group learning that was adopted throughout the entire research period took the form of whole class discussion because the groups comprised the total number of students in the whole class. The participants decided to have their arrangements regarding when and where to meet outside the lesson time at their convenient time. I found their decision justifiable because their semester workload is divided into a number of course units taught by different lecturers at different times which makes having a specific schedule for meeting difficult. Thus they agreed that they would arrange for group meetings when they are free on their timetable. The failure to have specific meeting schedule could be the reason why challenges like absenteeism had to arise. This also made it hard for me to follow up groups' activities since there was no specific time when meetings were held but only depended on the prevailing circumstances in a given week.

Due to the challenges that arose, particularly absenteeism, we resolved that some of the activities would be done in the lesson. This implied that short learning tasks would be assigned to students to be discussed within the time frame for the lesson. This was to ensure that all participants contribute towards group activities and benefit from one another as it ought to be in group learning. This was also intended to empower students to develop group skills and to get

acquainted with group dynamics that promote cooperation through working together. This also brought yet another challenge in its own way. The participants became reluctant to perform their tasks especially chairing group discussions whenever I was around and instead wanted me to always chair their discussions. I told them that group discussions were meant for their own learning and thus they should be the ones to chair and control what is done and how it is one. To ensure that they perform their duties, I would present them with a task and move out of the class for some minutes to ensure that they start on their own and then I would join it just to supervise what they were doing. I ensured that during these discussions each student participated in one of the activities as already mentioned above.

This made me to realise that though making group discussions mandatory in lesson time was somehow justifiable in our case; it may not bring about self reliance among the students as there is always tendencies of students seeking for advice from the teacher even in small issues and challenges they would discover and solve on their own when they give them due attention and time. However since the students were getting introduced to this method of learning from a totally teacher centred nature of learning, it was crucial that I assist the students until they could master working in groups on their own and be able to accomplish the stipulated content in the time available. This idea is supported by Bryan West (19th September 2011) where he argues that though allowing students to struggle along their way to develop effective group norms and standards of working may be valuable experience, in many situations it slows down the primary objective of learning and the content being taught. Thus he suggests that teachers need to monitor group discussions for effective interactions especially in early stages of introducing group tasks and activities.

Although I continuously encouraged students to work together and they tried to adhere to my advice and guidance, I could still observe some individualistic tendencies among some participants. Even in situation where I could give a group assignment which was to be done in the group and submitted as a group work, some individuals would find it convenient for them to attempt it as individuals. Because I was interested in inculcating positive interdependence among my learners, I would refuse to accept their individual work and instead tell them to go back and do it together as a group. Some individualistic behaviour was also observed when learners refused to share their logs. I actually attribute such tendencies to the nature of learning they were exposed to and were used to which did not encourage cooperation as working together is taken as cheating.

I must admit that such challenges had to come up in our endeavour to implement group learning because the participants were at a crossroad of adopting two totally different and contradicting approaches i.e. one that encourages cooperation on one hand and another that encourages

individualism and competition on the other hand. It is my submission that learners needed time to try to link up and assimilate the idea of group learning into their experiences which were predominantly associated to individualistic and competitive nature; characteristic of teacher centred approaches to learning. This idea is supported by Johnson and Johnson (1999, p. 74) where they observe that group members need time and experience working together to develop into an effective group.

Although there were many challenges that I personally encountered in trying to adopt the strategy of group learning in facilitating the learning process of the teacher trainees, I must confess that the experiences that I acquired are far more enriching as regards improving my practical ability in facilitating learning and acquiring of group learning dynamics and skills. Whatever I together with the teacher trainees went through in trying to implement this learning strategy was a learning process which I feel has had a great impact on my understanding and awareness of how to use this strategy in the learning process of my learners so as to increase their learning outcomes.

5.3 Conclusion and Recommendations

In this section I present the conclusion and the recommendations based on the discussion presented above. In this research I set to experiment, experience, discover and document how I can improve my practice in facilitating learning process using learner centred approaches with the major focus on experiential learning and group learning while working with teacher trainees of technological studies of KyU. The teacher trainees were the students whose learning I was trying to facilitate during this research period.

This research was aimed at developing my understanding on how experiential learning with emphasis on learning by doing and reflection as well as group learning could be effectively and sustainably used in facilitating learning in the Ugandan context. Since I was working with future teachers, I thought that through this research I will be able to entice them to adopt such approaches later in their practice so as to bring about sustainability of the approaches in the education system of Uganda. In trying to achieve my purpose, I set out four objectives to guide this research and these are:

- To find out the state of art as regards teaching and learning in VET institutions focusing mainly on the challenges that teachers face in the teaching and learning process.
- To develop an understanding of how learner-centred approaches: cooperative group learning and experiential learning can be effectively and sustainably used in facilitating students learning process.

- Ascertain the possible challenges in the use of the above mentioned learner-centred approaches in the teaching learning process
- Develop possible solutions to the challenges faced in the use of learner-centred approaches mentioned above in the teaching learning process.

In this chapter I have discussed the whole action reflection cycle which has led me to conclusions and recommendations based on my explanations, reflections, analysis and discussion of the story of actions.

5.3.1 Conclusion

5.3.1.1 Challenges that face teaching and learning in VET institutions in Uganda

My experience in this research has empowered me to try to ascertain some of the challenges that are facing teaching and learning process in most VET institutions in Uganda. Teaching and learning process in most VET schools in Uganda is faced with lack of adequate tools, materials and equipment for practical lessons. This situation results into many teachers resorting to teaching of practical subjects theoretically at the expense of hands-on skills training which probably leads to less competent graduates as far as world of work is concerned. This situation does not only affect government aided institutions but also privately owned institutions. This challenge is majorly attributed to the low financial support that the government sets aside for VET institutions and to the fact that such equipments are very expensive for the institutions to purchase coupled with high taxes charged on their importation to Uganda by the government. However according to my observation teachers and school administrators have contributed to the worsening of this challenge by their failure to take good care and maintenance of those equipment and tools that are already available in schools leading to their break down.

On the side of curriculum, it was revealed that the curriculum followed is not regularly updated and thus is outdated and does not necessarily meet the current demands of the society and the labour market. It was revealed that what most teachers follow as curricula is the examination syllabus set by UNEB and may not necessarily cover all important aspects that are needed to produce competent craftsmen and artisans. This situation makes in most cases what is taught at school to be irrelevant and meaningless since it cannot be applied in real life situations to solve day to day challenges of life. This is also worsened by the fact that there is no close link between VET institutions and the labour market. There is no free of information between training institutions and companies which consequently brings about a mismatch in what is taught in schools and the qualifications demanded by the labour market.

The discussion of the story of actions also brought about the issue of poor attitude by the public and VET aspirants towards this form of education. VET is associated to education for less academically able students and those from poor families that cannot afford to compete for higher education levels in academic circles or those whose parents and guardians cannot afford to support financially at higher academic education level. As a result of such attitude many people do not want to be associated with such education path and even those that end up in the institutions are less motivated and interested to learn. This is mostly attributed to lack of or inadequate sensitisation programmes to make most Ugandan aware of the significance of VET towards the country's prosperity and development.

5.3.1.2 Learner centred approaches in teaching and learning process

My learning experience in this study as a researcher and a facilitator of learning process of teacher trainees of technological studies has been enriching, motivating, interesting as well as challenging as regards initiating and implementing of the above mentioned learner centred approaches in the learning process. As earlier mentioned in the previous chapters and at the beginning of this chapter my learning has been based on implementation of experiential learning and group learning as strategies of teaching and learning. The learning tasks that encouraged learners' active participation in documenting of lesson notes, writing personal logs, carrying out practical exercises in workshops and in class, engaging in class dialogues and group discussions all have been aimed at enforcing these strategies in the teaching learning process. The sharing of experiences and reflections as well as working in groups has created in the teacher trainees a feeling or sense of dependence on each other in order to succeed in studies, has promoted giving and receiving timely feedback about their learning situations and challenges from me as their facilitator and also from their fellow students.

My participants being trained under teacher centred learning throughout their school life until then, coping with the new approaches that were introduced during this research period was not a simple process but rather a challenging one. This was because the process necessitated the teacher trainees to be self driven, responsible and committed to their learning and being actively engaged in their learning process, a case that is hardly traced under teacher centred approaches to learning. This was not only a challenge to them as students but also to me as a facilitator who was trying these new approaches. It required my patience, motivation and self encouragement to accomplish what I started and also offering constant encouragement and guidance to the students during the process so as to keep the fire of change burning.

As Dewey cited in David Kolb 1984p.35 argues, experience does not simply go on inside the person but does go on there to influence the formation of attitudes of desires and purposes. He continues to say that every genuine experience has an active side which changes in some degree the objective conditions under which an experience is had. I thus hold a belief that much as the scale at which this research was carried out was very small and thus its impacts may easily neglected, the learning experiences that I together with the teacher trainees if continuously employed in our practice, will go an extra mile to improve the teaching and learning process in VET institutions. Since the participants in this process were mainly teacher trainees who are future VET teachers, I believe that if they adopt these strategies in their practice as teachers will also help to reduce some of the challenges that are faced in the learning process of Vocational and technical disciplines.

It is my submission that to concretise learner centred approaches in the education system, it will necessitate constant sensitisation and dissemination of the ideas to various teachers and trainers through workshops and other avenues coupled with their introduction into teacher training curriculum in order to expand and extend the concepts and ideas about them to a wide number of facilitators.

5.3.2 Recommendations

Based on the above discussion and conclusion I therefore put down my recommendations which is at the same time the way forward for this process. Since I had presented and discussed the findings and conclusions under different headings, the recommendations are presented in general however I will follow the logical order in relation to the already used themes.

Challenges facing teaching and learning in VET institutions

The situation revealed during situational analysis indicates that both government-aided and privately owned institutions suffer the same challenges. This implies that all stakeholders including teachers, parents, the government, school administrators, students, curriculum developers, companies as well as private institute owners are required to join hands in order to attend to this situation. In this case I put down the following recommendations

The government of Uganda through NCDC should rethink and always update the curriculum in collaboration with all stakeholders in the VET system and more particularly with the teachers (the implementers of the curricula) and the labour market (employers of the graduates and source of market requirements) so as to be in position to match the what is taught with the societal needs and technological advancements. It is through such changes in the curriculum that will open up

doors for incorporating new experiences acquired in various vocational fields that are important and relevant for the improvement and effectiveness of VET in terms of the needs of the society.

The government through BTVET should increase its financial support extended to various VET institutions so that they can be able to purchase the necessary tools, materials and equipment. This will also cater for teacher and trainers' welfare and probably increase financial support to those intending to carry on their professional development in the various vocational fields.

Teachers and administrators in vocational institutions should establish income generating projects by employing the various skills they possess and making use of the available facilities so as to be able to enhance and improve their financial base and consequently their welfare.

Teachers and trainers together with their students should take good care of and make proper use of the facilities that they already have at their disposal otherwise there will be no difference even if the government supplies the necessary facilities.

There is great need for continuous sensitisation of the public about the significance of vocational education and training towards the growth and development of the country. Career guidance and counselling programmes should be carried out in all schools at all levels of education in a bid to cause a positive attitude change towards VET.

There is also a need to increase the number of teacher training institutions to support Kyambogo University which is currently the sole teacher training institution for VET in Uganda. Teacher training programmes should be properly coordinated so as not to cause confusion and duplication of services provided in different schools of education and in different institutions of learning.

Learner centred approaches to teaching and learning

From my own experiences in this research while introducing the aspects of experiential learning and group learning in the teaching and learning process, I have realised that it is of paramount importance that when introducing new ideas or concepts in a given situation that adequate time is resorted to their initiation or introduction. Members of such setting should be allowed enough time to think, reflect and understand fully the essence of such ideas so as to be able to either assimilate them into their own existing experiences or accommodate them. Unless the new intervention is not fully understood, chances are that the expected results may not be fully realised. In relation to the above it is vital that when carrying out an action research into an educational matter or problem, it is also crucial that all the affected members of the community in which the research is to be carried out, fully participate right from the problem identification, to

the generation of solutions as well as to the implementation and evaluation of the solutions if the process of improvement is to be felt by all members.

Teacher training should emphasise practical and active learning such that experiences gained by teacher trainees through such kind of learning can be easily transferred in their practice as future teachers. This will bring about sustainability of such innovations and making valuable changes in the mode of instruction for the benefit of the learner.

The VET teacher trainees in all schools of education at Kyambogo University need to understand and appreciate their uniqueness in every aspect of life. They need to realise that they are different human beings with different personalities, abilities, interests and capacities and thus need to cooperate in order to learn from one another and develop a spirit of togetherness in learning groups and I also urge them to extend the same understanding and experiences attained to their future students when they later start their service as teachers. This will enable sustainability and easy dissemination of learner centred approaches to learning even to far areas of the country since they end up working in different parts of the country and thus bringing about improvement in technical vocational professional practice in Uganda.

Teachers and administrators in all VET institutions need to be sensitised and encouraged to try to make a shift towards learner centred approaches through various programmes such as refresher courses, teacher development workshops and seminars among others. This will help to reduce on the resistance they usually extended towards implementation of new modes of instruction by some other staff who try to so.

There is a need for the administrators in the section of technological studies under the department of civil and building engineering to rethink and possibly restructure teacher training programmes undertaken in this section so as to allow chances of specialisation in specific fields of study which will in turn allow more time and opportunity for the teacher trainees to acquire skills, knowledge and deep understanding of their vocations in specialised areas of study other than studying general knowledge in all trades on the surface. This will bring about concrete mastery of skills and subject matter in specific trades by the teacher trainees in addition to teacher training. There is also need for this section to link up with other technical teacher training programmes within Kyambogo University such that they can learn from each other and even supplement one another in one way or the other.

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Appendices

Appendix 1: Appointment letter

KYAMBOGO UNIVERSITY
P.O. BOX 1, KYAMBOGO
Tel: 041-286237/8/285001, Fax: 041-220464
Email: [dhrkyu@kyu.ac.ug](mailto: dhrkyu@kyu.ac.ug), www.kyambogo.ac.ug
DIRECTORATE OF HUMAN RESOURCES

1st September 2011

M^r. Kyarizi Lovance
Dept. of Civil and Building Engineering.
Kyambogo University

Dear M^r. Kyarizi

APPOINTMENT TO TEACH ON DAY AND EVENING PROGRAMME

Subject to approval of the Appointments Board, Management has agreed to appoint you as a part time lecturer to teach on part time basis in the Department of Civil and Building Engineering.

Your duties will include conducting tutorials, supervising student's project/practical work, timely setting and marking of tests and examinations.

In return for the services offered you will be paid the following:

(a) Lecturing

Course code	Course Name	No. of hours per week		Rate per hour	
		Day	Evening	Day	Evening
DTSS 112	Technical and Vocational Education I	-	2	-	25,000/=
DTSS 212	Technical and Vocational Education II	-	2	-	25,000/=
DTSS 114	Wood Working	-	2	-	25,000/=


(b) Invigilation at Ushs. 15,000 per session during examination period
(c) Transport refund at Ushs. 10,000/= per day
(d) Setting examinations at Ushs. 20,000/= per Examination
(e) Marking examinations at Ushs. 1,000/= per script.

You will teach a total of twenty four (24) hours a month on evening programme during the 1st Semester of Academic Year 2011/2012. After delivering each lecture you will have to sign a counter book in the Department of Civil and Building Engineering which the Ag. Head of Department shall counter sign.

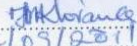
Please note that your inability to fulfill your duties may result in termination of your appointment.

Please signify your acceptance by signing in the space provided below and return a copy of this appointment letter to the undersigned.

Yours sincerely


Godfrey Tumwesigye
DIRECTOR, HUMAN RESOURCES

cc
Vice Chancellor
Deputy Vice Chancellor (AA/FA)
University Secretary
Ag. Academic Registrar
University Bursar
Chief Internal Auditor
Ag. Dean, Faculty of Engineering
Ag. Head, Department of Civil and Building Engineering.

Appointee: I accept/do not accept
Signature 
Date 14/09/2011

Appendix 2: The open-ended questions used during situation analysis

Note: *The space provided for answers has been reduced to fit the page.*

Questionnaire for teachers

Introduction

I am Lovance Kyarizi a student at Akershus University college-Norway pursuing a master's degree in Vocational Pedagogy. Currently I am back in my home country for field work; carrying out a development research project which is one of the requirements for the award of this degree. From my experiences as a students and a teacher in Ugandan vocational schools and as a master student in Norway, I have come to realise that there is need to improve our practice as teachers and practitioners in this trade-carpentry so as to be relevant to the needs of the society and workplaces. It is as a result of this realisation that I intended to approach you as practitioners and trainers of In VET institutions so that we together can find out ways through which we can improve our practice of carpentry. Your responses to the questions below are very important and it will be treated with due confidentiality it deserves.

Consent: I am willing to participate in this study and my views can be used for the purpose of this research without any further consultations.

Name.....Signature.....

1. For how long have you been in this profession?
.....
2. What activities do you engage in to ensure your professional development?
.....
3. What is the attitude of the community towards carpentry as a trade or field of study?
.....
4. How does this community attitude impact on your practice as a facilitator of learning in your field of study
.....
5. How do you rate the curricula that you follow in your teaching? Please give reasons for your response.....
6. How does the scenario you have mentioned above influence your professional practice as a teacher of carpentry?
.....
7. What do you have to say about the availability of the materials you use to facilitate students' learning?
.....
8. How do you utilise the community as a learning resource for the students?
.....
9. How is the situation mentioned above impact on the teaching and learning process and the general practice of VET in your field of study?
.....
10. Briefly explain the challenges that you generally meet in your professional practice as a teacher?
.....
11. What solutions would you suggest to meet the challenges you mentioned above?
.....

Appendix 3: Interview guide during the interview with the NCDC official

Interview guide

- VET is supposed to train people to acquire employment in the current situations and to maintain it in the future, how does NCDC and particularly BTVET department ensure this as a body responsible for developing and enforcing the curriculum?
- How often is the curriculum revised?
- Who are the stakeholders involved in this exercise?
- Carpentry is a practical subject aiming at skill acquisition and development, why is it that the evaluation and assessment tools used, emphasise more theory than practical?
- What plans do you have a department responsible for curriculum development to ensure that the curricula meet the ever changing societal needs and global trends as far as curriculum development is concerned?