ENHANCING THE USE OF INSTRUCTIONAL MATERIALS FOR INSTRUCTOR TRAINEES IN TAILORING AND GARMENT DESIGN AT KALIOTTE

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DECLARATION

This thesis is my original work and has never been submitted for a degree in any other University.

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DEDICATION

This dissertation is dedicated to my daughter, Ayikoru Doreen, my dear wife Kyampeire Happias, my late mother Omiru Pia, late guardian Ochola Daudi, and all those who would like to see more improvement in Vocational Pedagogy.

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LIST OF ACRONYMS /ABBREVIATIONS

ATL: Active Teaching Learning

BTVET: Business Technical Vocational Education Training

CTTE: Certificate in Technical Teacher Education

DIT: Directorate of Industrial Training

DITTE: Diploma in Instructor Technical Teacher Education

GOU: Government of Uganda

KALIOTTE: Kal Institute of Technical Teacher Education

KYU: Kyambogo University

MTSIFA: Margaret Trowell School of Industrial Fine Art

MOEST: Ministry of Education Sports and Technology

MVP: Masters in Vocational Pedagogy

NORHED: Norwegian programme for capacity Development in Higher Education.

PDCA: Plan, Do, Check, Action.

TGD: Tailoring and Garment Design

TIET: Teacher/Tutor Instructor Education Training

TVET: Technical Vocational Education Training

UBTEB: Uganda Business Technical Education Board

UGAPRIVI: Uganda Association for Private Vocational Institutions

UNESCO: United Nations Educational Scientific and Cultural Organisation

UNEVOC: International Centre of Technical Vocational Education and Training

ABSTRACT

The study was conducted to explore ways of providing adequate instructional materials for instructor trainees in Tailoring and Garment Design (TGD) to improve their pedagogical skills at Kaliotte. The following research objectives guided the study to; explore instructional materials to enhance pedagogical skills of instructor trainees in tailoring and garment design at Kaliotte, implement improvisation of materials as a strategy to enhance pedagogical skills of instructor trainees' in tailoring and garment design at Kaliotte, and evaluate the impact of improvised training materials on pedagogical skills of instructor trainees in tailoring and garment design at Kaliotte. Improvisation and microteaching were the implementation strategies aimed at improving the pedagogical skills of TGD. The participatory action research (PAR) design was employed whiles using a qualitative approach. Data was collected from participants while employing interviews, observation, and focus group discussions, as the methods of data collection. The findings unveiled inadequate supply of instructional materials as one of the key factors affecting pedagogical skills development in addition to inadequate practice. The study recommended that improvising and microteaching with instructional materials should be enhanced and on regular basis by the trainees and instructors in each semester to improve the teaching and learning skills for continuous professional development.

CHAPTER ONE: INTRODUCTION

1.0 Overview

This chapter presents the background to Technical Vocational Education and Training (TVET), and the relevance of enhancing pedagogical skills of instructor trainees in tailoring and garment design through adequate supply of instructional materials at Kal institute of Technical Teacher Education (KALIOTTE), Mukono district. The statement of the problem, purpose and objectives of this study, significance and justification of the study, scope of the study and definition of key terms.

1.1 Background to the study

1.1.1 Vocational Education and Training

The term vocational education and training according to (UNEVOC, 2012) synonymously fall under different classifications following specific geographical areas. Vocational education and training (VET), technical and vocational education (TVE) and technical vocational education and training (TVET) are used to describe the same thing (Atchoarena, 2001). UNESCO-UNEVOC further states that despite the various TVET terms, the following describe TVET: Apprenticeship Training (AP), Vocational Education (VE), Technical Education (TE), Technical-Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education (WE) and Workplace Education (WE).

However, analysis of the above different nomenclatures focuses at preparing an individual for work in a particular field(s). According to UNESCO and International Labour Organization (ILO, 2002), Technical Vocational Education and Training (TVET) refers to those aspects of the educational process involving general education, the study of

technologies and related sciences, the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life.

Concurring with the above observations, I argue that in my practice, this description of TVET made me observe that the general education is not so much emphasized in Uganda's TVET because at craft levels of the training, the aspect is not even included on the teaching curriculum nor assessed. However, where general education has been considered in teacher training institutions, it is taught in isolation of vocational theory and vocational training. As a technical teacher and a student of vocational pedagogy, I would describe vocational education and training as the field of education where an individual acquires knowledge and skills on work and develops positive attitudes as well as competencies for executing the associated tasks for personal, community and national development.

Arinaitwe (2012) defines TVET as a learning system in which both hard and soft skills are developed within a joined-up, integrated development and delivery framework that seeks to improve livelihoods, promote inclusion into the world of work that supports community and individual agency. The hard skills referring to technical hands on competencies while the soft skills referring to interpersonal competencies between teachers and learners and the community.

Egau (2002) regards vocational education as the provision of knowledge about vocations and skills required for production of goods and services. While Egau's description of TVET tends to lay emphasis on knowledge and skills acquisition for work, it is my observation that TVET in Uganda does not fully prepare its trainees for work as reflected from theoretical mode of training at the expense of hands-on training recommended by TVET globally. This has in turn resulted into incompetent persons who are at a dilemma of seeking paid up employment due to their inability to apply the acquired skills for self-sustainability.

Nevertheless, this could be an outcome from incompetent instructors/teachers who do not have any pedagogical skills (Uganda, 2013).

In 1870s, when the European missionaries pioneered the birth of formal vocational education in Uganda, the limited formal vocational education training centers set-up at each Church Mission Centre were to train people who were to fulfil the needs of evangelization and construct churches, schools, hospitals and make furniture (Ssekamwa and Lugumba, 2001). However, before introduction of this western formal education into Uganda, there was indigenous education in form of practical training. The general purpose of this training was to enable each member of the society to become self-reliant and be helpful to other members of the community (Ssekanwa, 2004). The skills were passed on from the old to the young within the family through a form of apprenticeship while learning process was by doing. Teachers were mainly elder relatives with sound mind and local specialists from whom learners could master particular skills like pottery, weaving and constructing houses (Okello, 2009). To date, this direct indigenous education is reflected in some vocational practices like ceramics, weaving, carpentry and backcloth making in the rural areas where the youth are trained by specialists to gain the required skills for transition to the world of work.

The analysis of formal colonial education system suggests that the teaching of technical skills took place through government work-shops on an apprenticeship basis, special instructional workshops on a production basis and through properly instituted technical schools which were already in existence under the missionaries (Phelpstokes commission, 1924 cited in Ssekamwa, 2001). The training was not to propagate the technical skills to the local Ugandans so that they become instructors of the communities, rather to be semi-skilled and skilled implementer of what was learnt. The courses taught in the formal vocational institutions were an improved version of the indigenous TVET fields to reflect what was in Britain and offer new services to the colonies.

This was reflected in trades such as carpentry, wood-carving, shoemaking, plumbing, tailoring and weaving. Today, TVET institutions in Uganda have added bricklaying and concrete practice, electrical installation, and motor-vehicle mechanics to the five earlier mentioned trades whose curriculum was strictly adhered to.

In implementing the trades, the majority of teachers at the time were not pedagogically educated although they had been successful tradesmen in a particular trade and were recruited to teach (Ssekanwa, 2004). Moreover, teaching in technical schools was left to the amateurs – usually European former army corporals and bridge mechanics who might have got some mechanical skills back in Europe. Uganda up to date is still faced with the challenge of many pedagogically un-trained teachers in most of its vocational education institutions (Uganda, 2014) who need upgrading from knowledge based training of nineteenth century to psychomotor based training needed for twenty first century.

The instructors and teachers in most of Uganda's TVET institutions, according to DIT assessment report 2017 and BTVET report on accredited institutions, indicated that majority of the teachers still hold advanced craft certificates, certificates, ordinary certificates and diplomas in technical teacher education of 1990s. This reflect why they are stuck to using specific standard instructional materials and teaching methods stated in the curriculum without regard for the students background. Despite these technical qualifications, the instructors and teachers need to be equipped with pedagogical skills for training in TVET to meet demands of twenty first century for employability. That is why Dewey (Lucas, Spencer, and Claxton, 2012) stated that;

"If we teach today as we taught yesterday, we rob our children of tomorrow....."

Furthermore, there has been slow effort to change the curriculum to suit the country's vocational needs and address the low social status of VET that had been inherited from the colonialists (Okinyal, 2006). This according to Ministry of Education's department of TIET is due to insufficient funds for teacher training. The implications of this is that as more applicants are admitted for TVET training, the institutions will need more qualified training staff with critical skills and problem solving skills for the 21st century.

On the negative attitude towards TVET created by missionaries, I contend that it should be the role of government, through Skilling Uganda programme, to change people's attitudes and make them realize the significance of vocational education. Learning should now arise from either their experience, or the changing labour market demands, and the few vocational institutions at that time continued to teach the very curriculum left behind by colonial government through the copy and paste approach.

Currently in Uganda, MoES through Teacher Instructor Education and Training (TIET) identified the urgent need to raise the status of work-based skills and to increase on the student and instructor awareness of quality job practices, attitudes and employability skills. Uganda government's efforts to develop TVET has been manifested through the BTVET Act of 2008 based on the principles and concepts of promoting an integrated, demand driven and competent based modular BTVET system. On-going discourses on skilling Uganda are directed towards developing TVET that can train contemporary instructor trainees with the right skills recognized at different levels of the vocational qualifications framework (Uganda, 2008). This desire explains why the Uganda Vocational Qualification Framework (UVQF) was established to define occupational standards in the world of work, assessment standards, and vocational qualifications to teachers and learners who meet set standards of the different studies and provide guidelines for modular training (Uganda, 2008 and Uganda, 2012)

Moreover, the majority of Uganda's vocational education institutions are private, comprising of few trained instructors with pedagogical skills. This is pointed out in the National Development Plan and in the BTVET strategic plan 2012/3 to 2021/2 (Uganda, 2012) where it is stated that over 1000 VET institutions are private with 600 registered by the MoES against the 137 publically owned institutions. This points out the need to have more trained TVET instructors to meet the demands of the ever changing global technology. Not only has there been no change in curricula, but also, low level of instructor training that is still dominated by theory as opposed to practical learning. Based on this background, the study was conducted to improve the situation of instructors' pedagogical skills in practice, communication and innovation at Kaliotte.

In Uganda, even with a series of reforms to improve the quality of teaching and learning, the BTVET sector still suffers from several challenges ranging from understaffing, insufficient teaching and learning materials, to lack of institutionalised CPD programs and poor funding (Uganda, 2012). This means that improving the quality of teaching and learning in instructor training colleges needs to be a priority (Lucas, 2012). This is because 30% of the estimated 5,000 instructors in Uganda have the minimum requirements to teach (40% in public and 21% in private institutions), translated- to 3,500instructors in need of upgrading training in competences related to occupational skills, industrial skills and instructional skills (Uganda, 2012).

1.1.2 Background to Vocational Pedagogy

The term pedagogy has been defined in different forms by different scholars. Bernstein citing (Harry, 2001) described pedagogy as a sustained process whereby somebody acquires new forms or develops existing forms of conduct, knowledge, practice, and criteria, from somebody or something deemed to be an appropriate provider and evaluator. Exploration of vocational pedagogy during my learning process at Master's level at Kyambogo University

indicated that vocational institutions should develop new strategies that are relevant for improving upon obsolete strategies that cannot meet the current situation on the ground.

Mjelde (2006) in a presentation paper entitled, "New challenges in the social organisation of knowledge in vocational education: unity and diversity in vocational didactics in relation to the identity of specific trades and professions," termed vocational pedagogy as a learner-centred approach to teaching and learning whereby the emphasis is the relation between the task and the learner. Reflecting on Mjelde's concept of vocational pedagogy, the task in training is the core of the learning process. What can be further noted from Mjelde's interpretation of vocational pedagogy is that it links vocational training and vocational theory which are at the centre stage of vocational education.

Nilsson argues that general knowledge should be considered as the third item of Vocational Education besides vocational theory and vocational training (Mjelde; 2006). Nilsson emphasized that the three aspects of vocational pedagogy be taught in an integrated form of learning. This therefore means that vocational pedagogy is an education program geared towards experiential based development in crafts, trades, occupations and professions in which the theory and practice have to be integrated. The learning is by doing and personal involvement in activities undertaken (Mjelde, 2006). The learner makes use of the head (H), heart (H) and hand (H) (3H). This holistic triangulation in learning in my reflection creates a strong link between the instructor /teacher, learners and the instructional materials and tools to improve pedagogical skills.

Reflecting on indigenous education in Africa and especially in Uganda, Ssekamwa (2001) observed that teaching and learning were by doing and observing while the learning workshop was the venue of the activity.

Arinaitwe (2011) and (Kyakulumbye, 2008) describe Vocational Pedagogy as providing for "a learning experience that is social, passionate and inspiring. The emphasis is on high order thinking skills "how" and "why" of the learning rather than the low order thinking skills of "what" and "when/ who". The high order thinking skills support the pedagogy aims to enhance the learner's capacity and desire to learn, be an independent thinker, productive citizen and future leader". This view analyses Vocational Pedagogy in relation to two key aspects of teaching and learning: the "how" of learning as the teaching and learning methods, and the "why" of learning perceived as the learning goals; objectives the learning intends to achieve. Reflecting on my three years' experience in teaching at Kaliotte coupled with my postgraduate Vocational Pedagogy training, my focus shifted from the subject matter that mainly addressed the "what" of learning to the "how" and why aspects of learning .

It can be reasoned that Vocational Pedagogy at Kyambogo University does not only address the high order thinking levels of "how" and "why", pointed out by Melinda and Angliss, but also observes the "who" (the teacher and the learners), "when" (time structure for the learning), "where" (the venue for conducting the learning - learning environment) and "what" (the aim of learning – content). This means that vocational pedagogy considers the "5W+H" system. From my observation at *Kaliotte*, all the "5W+H" need to be interrelated and given equal attention for effective teaching and learning process.

1.2 Background to the study

Training an instructor-teacher how to teach in the classroom or workshop has never been an easy task in the Teacher-Instructor Education Training (TIET) programme. According to BTVET strategic plan 2012/3 to 2021/2 (Uganda, 2012), the current situation of skills development in Uganda has been greatly affected by the quality of skills provision in our training institutions. Good quality teaching ensures pre-service instructors achieve the expected competences.

Several public and private instructor training institutions have been upgraded together with TVET institutions under Uganda government and international funding. Some of these institutions show better management and resource use as quality of training is assessable. However, the private instructor training institutions are failing to deliver training commensurate with the standards set by Ministry of Education and Sports due to lack of instructional materials.

However, better quality requires better qualified TVET instructors and training equipment and tools – instructional materials.

The availability and a systematic use of instructional materials improve the training process. Sunday (2010) described that Instructional Materials in training make trainee learn more and retain better what they have been thought and allow the trainee to discover themselves and their ability. They are as a tools used for engaging trainee powerfully in the training process.

Training activity without Instructional Materials could not be effective as they are basic channel of communication of ideas and concept in the workshop / classroom for the purpose of bringing about effective training. Rao (2005) contended that teaching aids help the trainer communicate with his/her trainee in a more desirable and effective way based on the advantage gained for the use of instructional materials,

The availability and use of Instructional Materials influence training activity. Meanwhile, the availability and adequacy of Instructional Materials use promote effective training activity in TVET. However, their inadequacy affects the skill performance negatively and create poor training environment for the instructor and learner. Thus, instructor-trainer and trainees may create simple instructional materials for free and inexpensive materials for effective training process. With regarding to this view, even though the instructor-trainer may not have the necessary Instruction Materials at their fingertip, they should strive to produce or improve their own skills from local available material in collaboration with their trainees for the sack of quality of training.

At Kaliotte, a private instructor training institute, has inadequacy of instructional materials makes the instructors and students opt for alternative source of materials for use in training and micro-teaching in the research.

1.3 Motivation to undertake this study

I am a vocational teacher by qualification and have five (5) years teaching experience in Tailoring and Garment Design Department at *Kaliotte*, Mukono. So far the admissions per academic year for DITTE from 2012 to 2016 have not exceeded six students. This population is uneconomical for a programme that is technical by nature in terms of instructional materials used for teaching and payments of six teaching staff in the department. Therefore, the institution has to prioritize where to put more focus with minimum resources at her disposal.

Besides, during the six years, whenever the researcher went for school practice supervision of Kaliotte students in TGD, he observed and took notes on the teaching process and insufficient instructional materials being used. Most pre-service instructors tended to respond to the "what" question in their lesson plans and schemes of work. The "How" and "Why" questions that make learners understand concepts and apply them with instructional materials were only noted in students' notebooks and demonstrations by the teachers. This meant the students would only learn from the observation, not from practice. Delving into researcher's observations and notes made from teaching and learning at *Kaliotte,* and from school practice, gaps in trainees' use of instructional materials were identified. As an MVP student, a need to explore strategies to avail instructional materials and approaches to teaching and learning arose. Consequently, the researcher was motivated to examine how pedagogical skills of the second year instructor trainees can be enhanced to build a strong human resource with the available instructional resources at Kaliotte.

1.4 Situation analysis at KALIOTTE

Situation analysis refers to the fundamental first step in the social and behavior change communication change process. It involves a systematic collection and study of education and

demographic data, study findings and other contextual information in order to identify and understand the specific educational issue to be addressed. It examines the current status of the education issue as well as the social, economic, political and education context in which the education issue exists. The situation analysis gathered information on four areas:

- The problem, its severity and its causes.
- The people affected by the problem (potential audiences).
- The broad context in which the problem exists.
- Factors inhibiting or facilitating behavior change.

General observation and primary data on teaching and learning skills of second year instructor trainees in tailoring and garment design at *Kaliotte* revealed use of the conventional didactical approaches. Lecturers preferred to cover content for the semester theoretically with minimum practice due to lack of instructional materials. Lecturers therefore preferred to read notes or gave hand-outs, whose content they explained later in another session.

A case in point here is TGD at Kaliotte whereby lecturers and trainees continually source for teaching-learning materials (Focus Group Discussion, 13th October, 2017). This is always done in case of absence or shortage of standard or accredited teaching and learning elements in TGD for a meaningful realization of specified educational goals and objectives. The improvised materials provided for the shortages in resources such as fabrics aid in the teaching and learning process. This practice scales down the teaching and learning in terms of time, number of instructor trainees, teaching skills and content to allow the instructor trainee to focus on selected aspects of teaching.

Concurring with this assertion, I support that at *Kaliotte*, instructional materials that serve as practical communication means between the lecturers' and learners were lacking. The incompetence of lecturers and instructor trainees in only using standard instructional

materials and limited teaching-learning techniques has led to TVET instructor training institutions perpetuating a vicious circle of poor instructors who produce craftsmen who do not meet the requirements for world of work. Therefore needed some guidance, coordination, supervision and more time for correction in the class lesson teaching and learning. Learning at *Kaliotte* was seen as being detached from the tasks given by the lecturers due to lack of instructional materials, hence, much of the tasks were theoretical in nature to cover up the curriculum.

During the situation analysis, participants highlighted that there were no standard instructional materials in stock according to stakeholders, Table 1. In order to have an in-depth understanding of the performance and prospects of teaching and learning issues in tailoring and garment design at *Kaliotte*, the researcher engaged TGD trainees and lecturers in an effort to identify the internal and external factors influencing teaching and learning (Vidal, 2005). The workshop opened the stakeholders to key creativity tools in instructor training. These concrete problem solving tools used were; fluency in presentations, flexibility in handling teaching and learning conditions, originality of ideas and elaboration of context in TVET.

Consequently, prior to identifying the pedagogical concerns in teaching and learning, the administrator at *Kaliotte* presented a work process analysis of the activities a DITTE instructor trainee pursuing TGD, goes through right from admission to graduation at the institute. The work process analysis indicated the concerned personnel, work process, tasks carried, and competences that were involved as seen in Table 1.

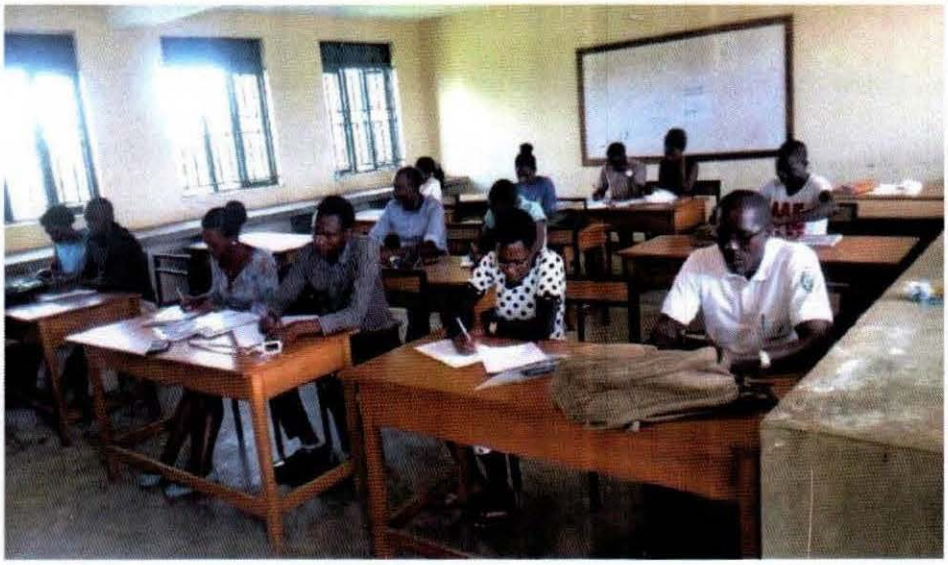


Figure 1: Instructors at KALIOTTE in a Future Workshop

Source: Primary data; Sept. 2017

This process triggered several issues of pedagogical concern from all the participants; instructor trainees, instructors and administrators. Through paper carousel and brainstorming, the following pedagogical issues were deduced by the two groups from the work process held on 01st February, 2018.

Insufficient practical, ineffective assessment of practical work, insufficient teaching practice in professional courses, poor time management amongst lecturers and instructor trainees, insufficient teaching and learning resources/ instructional materials, inability to conduct study trips, low curriculum coverage in some course units, obsolete programme content, delays in feedback, poor learning environment. With these negative attributes the researcher in his teaching had to be selective in choice of examples to the instructor trainees to enable them to understand clearly the concepts being taught. Examples from personal experiences of the trainees in the past and their environment greatly contributed to achieving the learning outcomes set.

After the work process analysis, a question was presented to the participants, "As an instructor in tailoring and garment design, what pedagogical skills would you want to see improved upon in you and other instructors in teaching and learning process?" This concern arising from the work process analysis formed the basis of the interactions that took place in the Future Workshop, Figure 1. Participants were prompted to form two groups; one group with six (6) participants and second group with seven (7) participants that respected gender balance. Each group formed had three female trainees of Tailoring and Garment Design. While the seven were male trainees pursuing technical teacher training civil and motor vehicle engineering.

Thereafter, through a Future Workshop and Pairwise matrix ranking (Table 2), the teaching concerns that each of the two groups brainstormed on, were clustered into short term, mid-term, and long term. Pairwise Ranking Matrix of gaps at *Kaliotte* tailoring department. The clustered themes were; inadequate instructional material, poor instructional approaches, poor teaching-learning environment, poor communication and poor time management (Table, 3).

Therefore, the stakeholders unanimously said that pedagogical skills of instructors in tailoring and garment design would improve if instructional materials were adequate in *Kaliotte*.

1.5 Statement of the problem

Despite emphasis on the use of instructional materials in the teaching and learning processes, Tailoring and Garment Design (TGD) lecturers and instructor trainees have continued to teach and learn the course units without adequate instructional materials at Kaliotte. During the stakeholders' focus group discussion held on 13th October, 2017 and future workshop on 01st February, 2018, the stakeholders identified low skills delivery to and acquisition by trainees in the teaching and learning of TGD in Kaliotte. The problem was attributed to a number of factors such as lack of adequate financial support from the institute administration due to low income base from few trainees admitted in TGD, lack of fundamental skills and

strategies for improvisation. Other factors included time constraint, institute location from the town of Mukono and Kampala city, inability to identify local materials and lack of exposure on improvisation on TGD and rigidity to practice demonstration as standard teaching technique. Once this situation is not addressed, instructor trainees' skills acquisition and their overall academic performance in TGD at Kaliotte will continue to be affected. During the future workshop, stakeholders agreed democratically to explore the possibilities for improvising instructional materials to use in order to enhance pedagogical skills (Gall & Gall, 2007) and (Grollmann, 2008).

1.6 Purpose of the Study

The study was to improve on adequacy of instructional materials for second year instructor trainees in tailoring and garment design (TGD) to improve their pedagogical skills at *Kaliotte*.

1.6.1 Objectives of the study

This research was guided by the following specific objectives

(i) To explore use of instructional materials in Tailoring and Garment Design at Kaliotte.

(ii) To implement improvised materials as a strategy to enhance pedagogical skills of instructor trainees' in tailoring and garment design at Kaliotte.

(iii) To evaluate the impact of improvised training materials on pedagogical skills of instructor trainees in tailoring and garment design at Kaliotte.

1.6.2 Research Questions

(i) What possible strategies can be used to explore material provision enhancement of pedagogical skills in tailoring and garment design?

(ii) How can the identified strategies be implemented to enhance the supply of materials for pedagogical skills of second year instructor trainees?

(iii)How has improvisation of instructional materials impacted on pedagogical skills of second year instructor trainees after the implementation of the identified strategies?

1.7 Significance of the study

The study will be of importance to management of TVET Institutions and stakeholders to explore their environment for instructional materials in training. The study will also assist policy makers in Ministry of education and sports, Technical Teacher/Instructor Education Training, and Kyambogo University in assessing the quality control of teachers and instructors graduating from Technical and Vocational institutions for better service delivery.

The study will make TVET institutions reorganize service delivery and collaboration with KYU in resource exploration and documentation in Uganda; material or human resource for future research on pedagogical skills.

The results of this study will guide the government of Uganda, TIET department, to lay emphasis in improvisation of instructional materials and microteaching to improve on the pedagogical skills of instructors and teachers in training and world of work.

The findings of this research will support the revised *Skilling Uganda* programme strategy of 2020 in enhancing pedagogical skills of instructor trainees through improvisation and microteaching in all trades offered in technical and vocational institutions.

1.8 Scope of the study

This study was directed towards enhancing the pedagogical skills of instructors in tailoring and garment design at Kaliotte. The scope of the study covered the geographical scope, content scope and time scope of the topic understudy.

1.8.1 Geographical scope

The research was carried out at Kal Institute of Technical Teacher Education

(Kaliotte), in Sonde - Misindye Parish, Goma Sub-county, along Kyaliwajjala - Namugongo-Goma road, Mukono District. This is approximately 17 kilometres, northeast of Kampala, Uganda's capital city. *Kaliotte*is bordered by Nabusugwe to the north, Bukeerere to the east, Namanve to the south and Namugongo to the west.

1.8.2 Content scope

The study covered approaches of improving instructional skills of instructors through exploring use of instructional materials at Kaliotte. Specifically, the research was focused on exploring use of instructional materials; implementing the improved materials in microteaching sessions and determining the effects on instructors' skills improvement.

1.9.3 Time scope

The researcher focused on the period from September, 2017 to December, 2017 and January, 2018 to February, 2018 when the trainees are for their first and second semester. The researcher also considered observation notes made on the impact of insufficient instructional materials on trainees' skills development in teaching and learning TVET specific methods at Kaliotte from 2012 to 2016. Documentary data was from 1987 to 2015.

1.9.4 Limitation.

The study is designed to contribute to the better understanding of the use of instructional materials to enhance instructors of Tailoring and Garment Design at Kaliotte. However, several factors were faced to completing the research on time.

The situation analysis was a lot of work to organize the stakeholders as the teaching staff are all part-timers and second year students are all non-residents. Besides getting resources for the future workshop was challenging with limited financing. Setting up a good situation analysis was worthwhile for implementation phase.

1.10 Definition of operational terms

The following are the operational terms in this study;

Instructor trainees: Refers technical persons who undergo training in order to acquire skills, values and knowledge in a particular occupation of teaching other learners of lower level than himself or herself in a technical or vocational institute/ school.

Instructional materials: Refer to materials which provide concrete experiences which a learner needs in order to develop intellectually. They are materials capable of achieving the objectives of the concept to be taught and learnt.

Microteaching: Is organized learner-centred teaching programme for instructor trainees to improve teachers' behaviors in learning environment.

Pedagogical skills: Refer to generic skills or competences required in order to teach and learn effectively in a particular trade or occupation like communication skills, listening skills, collaboration skills, organization skills, information technology skills, creativity skills and analytical skills in a person for personal and community management. These are competencies in teaching and learning that cannot be learnt individually, they have to be shared so as to observe changes brought by them (Lucas & Spencer, 2012).

Tailoring and Garment Design: Refer to the art of making costumes out of fabrics according to a client's (male or female, adult or children) specifications. The process involves creating ideas for clothing and translating the ideas into making clothes items beginning with a pattern, a set of written instructions and paper templates. The patterns normally are made in many sizes and designs to show the pieces needed, how to cut them, and how to assemble them to make clothing.

CHAPTER TWO: LITERATURE REVIEW

2.0 Overview

In this chapter, the discussion focuses on the theory informing this study. The chapter further presents an analysis of the literature related to enhancing teaching skills through exploring instructional materials. The analysis of the literature was based on objectives of the study; to explore, implement, and evaluate the impact of instructional materials for instructor trainees in tailoring and garment design at Kaliotte.

2.1 Theoretical Framework

This study was hinged on constructivism theory which emphasizes solving problems embedded within teaching and learning so as to improve skills through use of authentic tasks like microteaching, experiences, settings, and assessments with contents that are presented holistic (Christie, 2005). This is because the core principles of didactics are learned and developed on the basis of real teaching practice situations and learners' experience (*Figure 1*). This study, however, focuses at improving teachers' professional skills through improvisation and microteaching (Hiim, 2015).

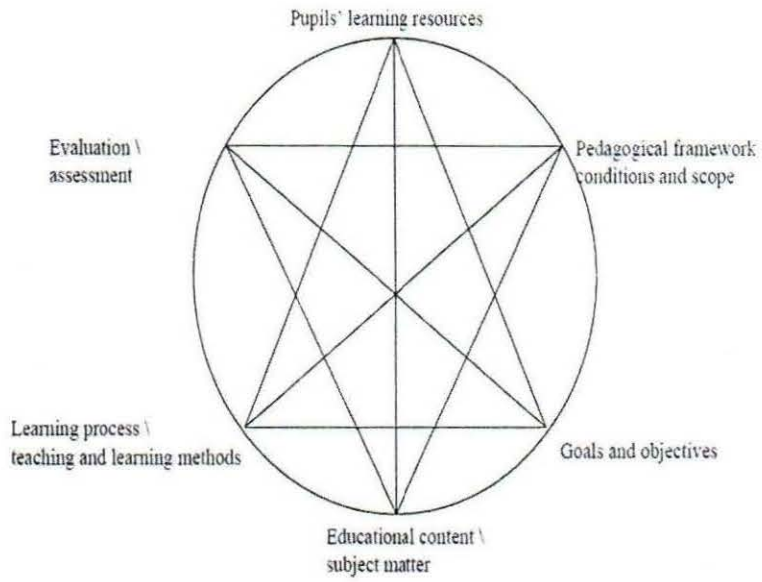


Figure 2. Didactic relation model

Source: Hiim (2011 p. 20)

In using the model illustrated in *Figure 1*, the researcher considered trainees' learning resources as those teaching aids or instructional materials that help an instructor trainee to achieve some set goal(s) during the teaching and learning process. They are medium for the teacher to physically interact or communicate on abstract concepts not clear to understand. Besides, pedagogical conditions and scope were conceived to address the teaching- learning environment. What can be further noted is that the six (6) aspects of this model are interrelated. Whereas goals and objectives provide a sense of direction to both instructor trainers and trainees, without the right subject matter/ content and methods, then the teaching-learning process cannot be constructive. Lastly, evaluation makes the teaching-learning process more meaningful. In case evaluation results are not in cycle with the set goals and objectives, instructors are compelled to repeat the entire teaching-learning process (refer to Figure 2*)*. Contrary to this study, the lecturers and instructor trainees at Kaliotte could not be provided with adequate instructional materials to repeat contents that the trainees did not get skills in as this was considered wastage of material by administration of the institute. In order

to ensure that the learning process took place, the lecturers had to be innovative in improvising instructional materials in order to meet the criteria set for evaluation.

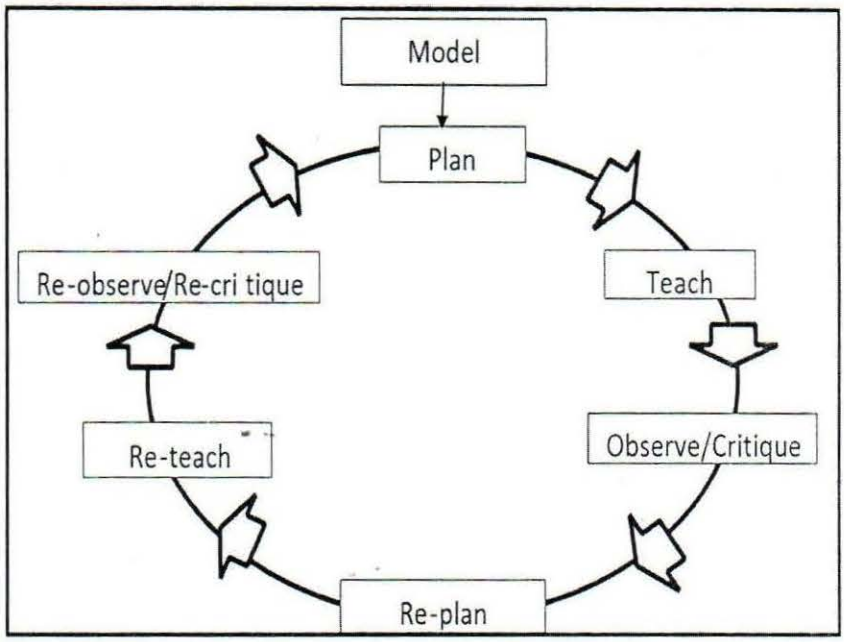


Figure 3. Lesson plan

Source: International Association of African Researchers and Reviewers (2006-2007)

On the side of instructors, assessments helped them to improve areas of importance in the teaching-learning process. Moreover this background information laid the foundation to the adage in learning that; '*when you tell me, I remember; When I remember, then I understand; When I understand, I can apply; When I apply, I can analyse; When I analyse, I can evaluate, and When I evaluate, I can create'* (Anderson, 2001). This implies that, by the time these trainees join Kaliotte, their philosophy on teaching and learning is based on remembering, understanding and applying only, which was a lower order thinking level (remember, understand, and apply) as illustrated in Figure 3.

The expectations on improving instructor trainees' pedagogical skills were analyzed in a class session within the department of Tailoring and Garment Design. The ways forward, towards fully realizing the required change were evaluated. The trainees agreed to collaborate and

improvise means of improving their teaching and learning themselves with whatever materials was available to sustain their training locally. They developed the concepts of high order thinking (to analyze, evaluate, and construct) by asking the 'what, why and how' questions. This was in compliance with the constructivism' theory in which instructor trainees actively constructed new ideas or concepts based upon their current social interactions.

Reflecting on the mini - expeditions we engaged in at Soft power education centre and, Hotel Tourism Management Institute in Jinja, as students of Masters in Vocational Pedagogy between 2016 and2017, we were encouraged to work in groups to plan and report on our activities constructively. This laid a basis that for any task a person engages, there was need to explore possibilities of what existed in order to explain the details of its structure and collaboratively extend the scope further. This implies that Part -time instructors should engage the new instructor trainees during their first interaction to know their expectations on vocational teaching and learning methods in their training. This cyclic effect of teach and review by reflection on what was taught helped the learners in constructing meaning to be integrated in the teaching- learning processes of TGD at *Kaliotte*.

Different scholars have defined and explained the term instructional materials in several ways. Instructional materials in instructor training refer to materials which provide concrete experiences an instructor trainee needs in order to develop and achieve the learning outcomes of the concept to be taught. This means that whenever there are inadequate instructional materials in training institutions, the teaching and learning skills of the trainer and trainees are affected (Stronge, 2004). The situation of limited training materials at times triggers the person in the teaching position to resort to improvisation.

2.2 Exploration of instructional materials for improving skills of instructors in Tailoring and Garment Design at Kaliotte

Instructional materials are very important in any teaching and learning process for many reasons. According to stakeholders at Kaliotte, they make it easy for the teacher to facilitate teaching and learning, they motivate the learners and make abstract concept concrete.

The availability and use of instructional materials influence training activity. In line with this, the availability and adequacy of instructional materials promote effective training activity in TVET. While, their inadequacy affects the skill performance negatively and create poor training environment. Thus, instructors and trainees may create simple tools and materials for free and inexpensive materials for effective training process.

According to Sunday, (2010) instructional materials provide concrete experiences which a learner needs in order to develop intellectually. Instructional materials are also capable of achieving the competences of the concept to be taught.

This inadequacy of instructional material s at Kaliotte largely impacted on instructor trainees' ability to achieve the goals of their training. This explains why some researchers continue to observe that when there are inadequate instructional materials for the teaching and learning of a task in any institution, the option should be for teachers to source for them. This act of sourcing for instructional materials when the standard ones are not available is termed as improvisation.

Improvisation here refers to sourcing, selection and deployment of relevant instructional materials in the absence or shortage of standard or accredited teaching and learning elements for a meaningful realization of specified educational goals and objectives.

These goals can be achieved if the learners are guided by the instructors during planning session before implementing the lesson to ascertain that the correct instructional materials are chosen to meet the desired competences set.

It is argued that instructor trainees normally find planning and collaboration with other teachers a critical part of professional development especially for new instructors their early years of teaching (Prytula, Hellesten, and McIntyre, 2010).

Nevertheless, at Kaliotte, it was observed that instructor trainees admitted after advanced craft lacked guidance on the model of scheming and lesson planning in Vocational Education and Training they were to follow. This was as a result of the admitted students being more exposed to the traditional scheming and lesson planning template based on objectives for general vocational education. Yet in technical and vocational education the tasks were examined on the TVET model based on competences. The use of conventional teaching templates bearing general and specific objectives as tools tended to confuse these new student instructors in TVET lesson planning as their peers used it. Moreover, instructors need to try-out teaching approaches that use varied instructional materials than using only a single technique like demonstration year in and year out (Lucas, 2012).

The learning based on the 'learning by doing' theory of Wenger and construction of learning in the process based on Thorndike's philosophy strengthened this exploration of materials by the instructor trainees practice (Remesh, 2013). Although improvisation of instructional materials have their merits and demerits (Ike, 2017), in this study, they were considered to enhance pedagogical skills of instructor trainees. In so doing, changes pertaining to creativity and collaboration behavior of the instructor trainees while teaching in TGD for better remembering, understanding and application would be realized (Haser, 2009).

It is further argued that instructors need to understand and practice the techniques in teaching and learning which are either passive or active (Lucas, 2012; Lucas, Spencer and Claxton, 2012). Lucas and Spencer demonstrate that instructors should not limit their trainees with the methods and techniques at their disposal. This is because through sharing information on techniques, instructors can be able to understand why concepts in Bloom's taxonomy of 'nouns' cannot be used with the Revised Bloom's Taxonomy (RBT) designed by Anderson (2001) that has active, action 'verbs' for lesson preparation which can be used for example in tailoring and garment cutting. According to Egau-Okou (2002) there is also need for instructor training institutions to critically consider the interplay between instructors' beliefs, knowledge and skills during training. This helps to open up instructors' ingenuity and confidence while teaching with an array of tools for any trainee (Mitchell, Reily, and Logue, 2009).

Other studies in African countries such as Uganda, indicate that the TVET situation is predominantly influenced by the poor instructors teaching skills and methods, poor competence and attitude (Uganda, 2012). TIET succumbs that indeed there are very many TVET instructors who lack demonstrable competences in knowledge and essential pedagogical skills such as lesson plan, activity based and learner-centred approaches. So in case an instructor was trained where such challenges existed, it could result to lack of proper and thorough grasp of concepts by learners due to the teachers' poor preparation (Kumar, 2008).

According to Kumar to be an effective instructor, knowledge of the subject matter and creating of an environment in the workshop where reshaping and redesigning of knowledge incentive of intellectual curiosity and innovative with independent thinking can take place, are

vital. On instructional materials and tools, training of competent instructors in TVET may also be challenged due to inadequate instructional materials that suit the trainers of the information technology generation (Fafunwa, 2004). In practice while teaching, the facilities, equipment and tools need to be adequate for use by the teaming number of TVE students. If that does not happen, then acquisition of skills in technical training programs will suffer and lead to the production of highly unskilled personnel who are unemployable and unproductive (Dayo, 2010). This is because teaching skills make instructors and learners' communication and interaction to be adequate, sufficient and result oriented (Kumar, 2008). This is more so effective if the instructional materials are available, adequate and appropriately chosen for the teaching and learning in tailoring (Lucas, 2012).

Related literature shows that many vocational and technical institutions have failed to achieve their missions in getting qualified instructors because the importance of exploring with teaching and learning materials are not greatly emphasized by the instructors. The student-instructors need to understand the common problems that may be there while sewing and be able to rectify them. These problems may be common and irritating and slow down the sewing process. So the person operating the sewing machine should be competent to rectify these and solve the problems by identifying the cause and laying strategies on how to solve the problem at hand jointly with colleagues.

Consequently, improvisation of instructional materials plays the role of a stimulant in the teaching and learning process. These instructional materials convey a precious quality of intimacy to the teaching and learning process according to Stronge (2004) and keep the mind of the instructor trainee alert. According Mazinga-Kakyankolo (2000), instructional materials make teaching and learning more understandable and real whenever they are available. Yet the successful implementation of curriculum almost fully depends on the

quality and quantity of instructional materials available to lecturers and instructor trainees for use in institutions.

2.3 Ways of enhancing pedagogical skills of instructor trainees in tailoring and garment design

In teaching therefore, instructors should be encouraged to work together with instructor trainees so as to enable them learn by observation and imitation in groups (Christie, 2005). This process encourages instructor trainees to have questioning minds while feeling free with the instructors (Kumar, 2008). So a favorable learning environment needs to exist in order to improve pedagogical skills. However, this can start with accessing and availing instructional materials (Okinyal, 2006). In case they are not available, then the instructor needs to plan with the instructor trainees on how to obtain the materials that relate them to the curriculum and real world. Instructors can even use their ingenuity to make use of "Cabbages" from garment construction through patchwork. This enables the instructors to put no material to waste in the fashion industry.

It is argued that in an attempt to improve pedagogical skills, instructor trainees and instructors need to explore their potential in use of instructional materials by asking 'what', 'how' and 'why' question while working(Anderson ,2001). They need to move away from the low order thinking to high order thinking level of remembering, understanding and applying associated with standard materials (Lucas, 2012).This is because vocational theory and practice that has learning outcomes can bring change (Nillson, 2011). Nilsson advocates further for integrated and holistic approach in learning and work in any education system that is vocational in nature. The holistic approach of vocational training works more appropriately for tailoring instructors.

Besides, Okinyal (2006) argues that the success or failure of a lesson depends on availability of teaching materials, tools, machines and equipment. Consequently, when instructional materials lack in any training institution, the graduating learners would be considered half-baked. They would not possess the competences required in the labour market. This implies that tools and materials are essential elements of a holistic vocational training process. Mazinga-Kalyankolo (2000) perceives the use of materials and tools as vehicles of expression as they determine and influence the trainees' mode and mood of expression. This means that without materials and tools, instructors cannot unfold their competences or abilities as they have the practical background on most materials in garment design they had worked with (Stronge, Tucker, and Hindman, 2004). Yet, once tools and materials are availed, the trainees can develop their creativity, thinking, imagination, originality, manipulative skills and expression (Lucas, 2012).

According to Okello (2012). the low rating of the pedagogical skills in instructor trainees could be due to the vocational graduates not exploring the possibilities microteaching offers for them during training to gain the pedagogical skills in tailoring and garment design. In the researcher's point of view, these trainees need study tours to tailoring and fashion workshops, seminars to orientate them to processes of planning, acting, reflecting and evaluating what they do. The case in experience for study tour was one that the MVP candidate researching had at Soft Power, a Non- government organization in Jinja where stakeholders teach and learn by using resources from their environment effectively.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter describes the methods that were used in the study. It specifies the research design, population of the study, sampling procedure, sample size, methods of data collection, research instruments, data collection procedure, reliability and validity of instruments, data analysis and ethical values within the study.

3.1 Research design

A descriptive survey research design was adopted for the study. In this design, a group of people or items are studied by collecting and analysing data from a few people, or items considered to be representative of the entire group. The study involved all the stakeholders' participation as agents of change in their society. The descriptive study design guided in collecting information about the stakeholders' attitudes, opinions, habits, or any of the variety of educational or social issues. By employing this design, the researcher was able to uncover the various ways through which pedagogical skills of instructor trainees at Kaliotte, were improved. This was possible because the research followed the cycle of action research to teaching in order to develop problem solving skills; plan, act, observe and evaluate; re-plan, react, reflect and re-evaluate.

3.2 Target Population

The population of Kaliotte comprise of 38 members who are involved in the training process. These are five (5), ten (10) lecturers/ teachers, one (1) administrator and twenty two (22) instructor trainees. Of this population, 27 stakeholders from Kal Institute of Technical Teacher Education, Namugongo, volunteered to participate in this study. The participants were drawn from Administrators, lecturers, and instructor trainees.

3.3.1 Sampling procedure

Purposive sampling technique was followed for collecting data from selected participants at Kaliotte through face to face interview based on structured questionnaire, which includes all the relevant information (Wenger, 2001). After collection of data, they were edited and processed manually. Then they were checked and verified for any omission, error or irrelevance with assistance of mentors in Vocational Pedagogy. Using a purposive sampling technique a number of stake holders were selected from Kaliotte to participate in the study. These were in the following categories; 06 second year instructor trainees, 06 instructors and one (1) administrator (see Table 4).

3.3.2 Sample size

Since a sample is a segment of the target population with the same characteristics, the sample size for this study was 13 stakeholders (refer to Table, 4). These were in the following categories; 06 second year instructor trainees, 06 instructors and one (1) administrator.

Table 4: Composition of target population

Category of population	Target population	Sample size	Sampling technique
Second year instructor trainees	16	06	Purposive
Lecturers and Instructors	10	06	Purposive
Administrator	01	01	Purposive
Total	**27**	**13**	

Source: Primary Data from Kaliotte: 2018

3.4 Data collection methods and instruments

In order to obtain the necessary data for this study, an observation checklist, semi-structured interview guides, focus group discussion (FGD) and future workshop guides were utilized as summarized on Table 5.

Table 5: Summary methods and tools of data collection

Method	Instrument
Interview	Semi –structured Interview guide
Focus Group Discussion (FGD)	FGD Guide
Future workshop	Future workshop guide
Observation	Observation checklist

Source: Primary Data

3.4.1 Observation

There was extensive review of secondary data from previous studies or research and reports relating teaching and learning skills to availability of instructional materials will be conducted. Secondary data were collected through consulting different publications relevant to the study. The internet, journals, published and unpublished researches, other documents on teaching and learning skills in tailoring cutting garment from Kyambogo University and the affiliated institutions training in DITTE was vital for the research.

The use of cameras during the observation process provided options for play-back to analyze the data critically. Primary data on pedagogical skills during the teaching and learning sessions were captured using various instruments like camera in phones and recording, lesson notes, schemes of work and lesson plans.

During the teaching and learning sessions in TGD at *Kaliotte*, we adopted the direct observation method which described as watching carefully, attentively and systematically events, objects, processes, relationships or people's behavior while recording these observations. Basing ourselves on the 'experiential theory', stakeholders visited the workshops with observation checklists to collect data on tools, instructional materials and pedagogic approaches from the instructors and lecturers in tailoring department

3.4.2 Interview guide

An interview is a conversation between two people - the interviewer and the interviewee, where questions are posed by an interviewer to obtain information from the interviewee concerning the particular study. In this study, the researcher used interview guides constructed by stakeholders, based on the objectives of the study. They constituted open ended questions aimed at capturing supplementary information and to triangulate information that is obtained from respondents. These questions could be rephrased in the course of interaction with respondents. It involved asking several questions that require verbal responses ranging from general to specific information on respondents' experiences on pedagogical skills.

According to Odiya (2009), when a researcher makes a face to face interview, he or she is actually making an observation. I chose this method because of its participatory nature and it would provide first hand data from respondents' behavior that we can record. Unstructured interviews were also used while collecting data on identifying pedagogical skills challenges from lecturers on the respective course units in clothing and textiles, the professional course units and the trainee instructors on their learning experience from the teachings.

3.4.3 Focus Group Discussion (FGD) Guide

Focus group discussion was chosen because decisions arising from the group are democratic resources. The focus group discussion aimed at gathering participants' insights on the researched phenomenon as shown in figure 4.

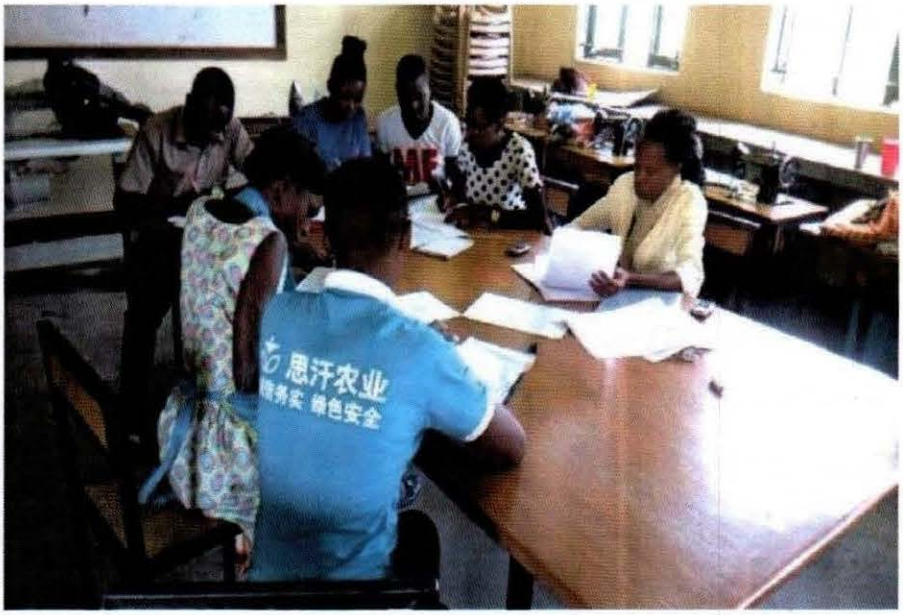


Figure 4: Trainers in focus group discussion

Source: primary data, Sept. 2017

Two focus groups were formed; each FGD constituted of seven (07) members – three (03) respondents in tailoring cutting garment and four (04) instructors of tailoring and garment design at Kaliotte. The FGDs were used during situational analysis process and SWOT analysis during data collection, validation and report writing. During the focus group discussion, the stakeholders identified gaps in teaching and learning that needed improvement in Tailoring and Garment Design Department at Kaliotte. This coincides with participatory action research approach which upholds that the problems within an institution ought to be tackled based on team discussions (O'Sullivan, Yonkler, Morgan, and Merritt, 2003). This method therefore assisted the researcher to understand stakeholders' responsibilities, benefits and desires so as to plan for improvement. Since there were six female instructors in tailoring cutting garment, the choice of Focus Group Discussion (FGD), a participative method involving a homogenous group of respondents in the discussion of issues of common concern through a moderator was appropriate.

The key challenges of instructional materials and teaching-learning approaches identified during focus group discussions were checked in the Future Workshop through Pairwise matrix.

3.4.4 Future Workshop guide.

Future workshop is a technique that empowers groups of people to understand their current situation in order to develop new ideas and solutions in a collaborative effort towards existing problems (O'Sullivan, Yonkler, Morgan, and Merritt, 2003). A Future Workshop emphasizes critique learning, team work, democracy, and empowerment. The Future Workshop at *Kaliotte* started with self-introduction of the researcher and stakeholders. This followed the researcher's presentation in which the stakeholders were guided through the principles of the action research, Future Workshop as being collaborative, democratic, fair, and transparent. In so doing, critical views were accepted in the different stages of the work shop. In this study, the challenges of inadequacy of instructional materials according to stakeholders could be handled through improvisation and microteaching strategies to improve teaching skills of the trainees at Kaliotte.

As teaching and learning process follow a cyclic process of plan, act, observe and assess, then the stakeholders recommended the descriptive study design in this research to collect information about the attitudes, opinions, habits of the instructors on the role instructional materials have in improving teaching and learning issues at Kaliotte.

3.5 Data collection procedures

These were the stages that were followed to collecting primary data on instructional materials and skills in using them for teaching and learning. An introductory letter was obtained from the NORHED - Masters in Vocational Pedagogy office to ease the data collection process at *Kaliotte*, Appendix 1. On submitting this letter to the Director of *Kaliotte*, permission was granted to undertake the study in *Kaliotte*. An introduction of

participants, who included; lecturers, instructor trainees, and the administrator in the research, was done. Appointments with the respondents on the dates, times, and venue for the meetings, were fixed. A Future Workshop was conducted and the data collected was subjected to analysis and presentation in the thesis.

3.6 Data analysis

This is the orderly breakdown of data in order to derive meaning out of it consequently leading to findings (Odiya, 2009). All data was organized into categories, and then code-named to get themes that were later analyzed and presented as findings in light of the research objectives. This was to provide a deeper understanding and make meaning of the data collected for later discussion on findings.

3.7 Reliability and validity of research instruments

In this study, interview guides and observation checklists were developed by stakeholders at Kaliotte. They were first tested on the second year instructor trainees to investigate the gap in available tools, materials and equipment. The expected results were tested across the peers in microteaching to check on their professional development. This was in a period of two weeks. However, where the results were not consistent, the action was revised based on the action research cycle. Different tools were used for the respondents to triangulate the truthiness of data (Creswell, 2014). The instructional materials available were used in a full lesson of two hours among six trainees in TGD. The drafting papers nor the fabric materials could not be enough for making a dress for an adult. The stakeholders then consented to scale-down the time, competence and materials for teaching in lesson plan to quarter scale.

Besides use of reliable instruments in the research to ensure validity of the instruments, the researcher tried out data collection tools at Kaliotte on the instructor trainees to ascertain whether the tools were appropriate, as supported by (Okello, 2012). The accuracy of the

findings was then checked against scholarly data in existence to ascertain the relationships between data collected and scholarly data as supported by (Gibbs, 2007) cited in (Creswell, 2014).

3.8 Ethical issues

Moral values are important when carrying out any research source. The researcher therefore paid close attention to ethical considerations in conducting the study. In this study, the researcher got permission from the programme coordinator of MVP to request the resident Director of Kaliotte give consent for carrying this action research. The researcher made sure that the names of the trainees and instructors remained anonymous. Participation in the study was voluntary. Information about the participants was kept private from the public so as to ensure participants' right to confidentially. A good relationship was kept with the institution, instructors, and trainees for the good contribution to teaching and learning at Kaliotte. The decisions that arose about the direction of the research and the probable outcomes were collective.

3.9 Limitations of the study

The study is designed to contribute to the better understanding of the use of instructional materials to enhance instructors of Tailoring and Garment Design at Kaliotte.

However, several factors were faced to completing the research on time. The time for collecting data was affected by TVET schools programme of opening the first and second semester of 2017/2018 academic year. Besides, the stakeholders are non-residents in Kaliotte as much as the instructors are part – timers. It was a challenge to bring the instructors who teach on different days within the week together for the situation analysis. This greatly delayed the first phase of the research in situation analysis and fixing time for future workshop.

Another factor was the cyclic and democratic nature of the research during future workshop and microteaching sessions. In cases where data collected were not complying, a review had to be done. Further still, outcomes from data collected had to be verified collectively by stakeholders. All these activities required financial resources besides transport from Kyambogo University to Kaliotte for the three weeks in the first semester and two weeks in the second semester, 2017/2018 academic calendar of Kyambogo University. However, the researcher was able to endure these challenges in order to collect the necessary data and compile with guidance of mentors from MVP programme.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.0 Introduction

The study presented research findings based on study objectives generated from responses of interviews with in the focus group discussions that were held. There were factors identified by the stakeholders that affected the teaching and learning of TGD to improve their skills. These factors included inadequate instructional resources and lack of enough hands-on training for the TGD course. Improvisation was suggested by participants to help improve on the inadequacy of instructional materials, while hand-on training through microteaching was suggested as an intervention strategy to improve on the learners' practical experiences. This is highlighted in the subsequent sections. Further, evaluation of the implemented strategies was conducted and the impact of the activities was highlighted.

4.1 Enhancing use of Instructional Materials in tailoring and garment design at Kaliotte

The findings based on materials stock list for the last two years revealed lack of instructional materials as the most pressing pedagogical challenge instructor trainees faced while learning to teach in the technical institution. Instructional material use in teaching and learning of vocational subjects, is vibrant as it enhances the hands-on experiences of a learners. They as well improve other associated skills that instructors require to make learning successful. These included; communication, creativity, problem solving, and organization, collaboration and study skills. Apart from the challenge of rigidity to change while teaching theoretically and reliance on hand-outs, respondents also claimed to lack role models, this was highlighted during an interview with a female instructor trainee who held;

"It is hard to know what to do when you cannot get enough examples from the instructors. Before I came to this institution, I thought most of the instructors here have workshops where I can practically learn from but I haven't seen any workshop belonging to any of the instructors, she said." (Interview date: February, 2018)

More still, the responses from instructors at Kaliotte indicated that pedagogical skill acquisition face the challenge of rigid education background, lack of new ways of teaching, lack of reflection on data collected, lack of interplay between lecturer's beliefs, knowledge, and practice. As one male instructor held;

"Since I came to the institution, I have been using lesson plans and schemes of work developed by the institution to guide the instructor trainees in microteaching lessons. These lessons planned using the institutions schemes of work, could not help the instructor trainees on the new pedagogical skills they need for professional teaching as I saw some gaps missing in the practice rather than theory. "(Interview date: February, 2018)

From the reflection above, it is clearly shown that some of the gaps that were identified by the instructors affected the competences of learners in TGD. For example, the stakeholders identified lack of detailed practice in a section on the lesson plan that affected learning outcomes. This means that it was not clear whether learners comprehended and processed the lesson content by putting it to practice to observe outcome of the lesson in a garment. The lack of student engagement in further exploration and personal reflection was evident as there was no indication of development within their work. The students would have been motivated if instructors were observed practicing what they teach at the institute involved the students in lesson planning and teaching collaboratively. But this was not the case on the ground.

In addition, lack of motivation and low societal attitude on indigenous ways of learning technical-vocational skills was another challenge identified by stakeholders who participated in this study. It was further noted that the low attitude of instructor trainees towards TGD at Kaliotte due to lack of instructional materials greatly affected the acquisition of pedagogical skills as learning approaches were limited to listening and observing what the instructor demonstrated. In order to get the attitude of instructors on pedagogical skill during training in tailoring, an attitude scale was employed and results presented in narrative form. Some respondents enjoyed the flexibility in pedagogical skills for training while a small number of

respondents did not see the flexibility. Nevertheless, minority of respondents asserted that pedagogical skills of learning by practicing, learning by sketching and drafting, learning through enquiry and feedback could not put an instructor to stress as opposed to majority participants who saw use of the cognitive more stressing.

From the data collected from stakeholders, the practical pedagogical skills were long life living and needed for sustainable development. The integration of prior experiences learnt from craft level played a big role in instructor vocational training subjects. Findings in the discussions of stakeholders showed that their prior practical knowledge on the aspects of tailoring and garment cutting learning, had a bearing on their grasp of the ideas shared. But they sought to get the practical teaching and learning skills in TGD.

Participants further emphasized the need for safety as a pedagogical requirement within the teaching and learning of tailoring and garment cutting. To the participants, safety in this context meant ensuring safety gears [nose and mouth masks], first aid boxes, and talking studios, among others. These are learnt theoretically and some have never seen these gears of safety except in pictures. Learners as well as instructors highlighted lack of necessary safety measure which was putting them at risk as safety equipment are not available. This is echoed in one of the instructors' comment;

"We deal with sharp tools for cutting, equipment for sewing and of course cutting pieces of clothes which have a lot of residues that go directly to the lungs. As an instructor, you feel the need to protect not only the learners, but also yourself from the dangers of the work processes within the learning setting. So we need adequate personal protection gear for the workshop. One of the instructors said." (Interview date; February, 2018)

On the resources and skills required for tailoring and garment cutting, a number of issues were highlighted that resonate on how the situation was at Kaliotte. Stakeholders highlighted the inadequacy of instructional materials, lack of continuous practice leading to lack of enough knowledge and skills in garment cutting, material knowledge, pattern drafting, and

occupational knowledge. On the lack of enough instructional materials necessary for teaching, the participants suggested a need to improvise using the waste materials in tailoring and garment design. As an entrepreneurial initiative, stakeholders made partnership with a number of professional tailors around Kaliotte to collect cut-out pieces of fabrics for recycling to conserve environment. Stakeholders used the collected off-cut cabbages" for demonstration and practice to scale. The "cabbages" collected by stakeholders can be seen in Figures 6 and Figure 7.

Figure 6: Improvised scrap fabrics procured from "Kiyembe":

Source: Primary data, Kiyembe, 2018

Figure 7*: Instructor demonstrating Microteaching with scrap fabrics*

Source: Primary data, Kaliotte, 2018

Further still, reflective, communication, creativity, critical thinking, organization, ICT, decision making, and analytical skills, were highlighted as inadequate, yet very crucial for developing learners' practical experiences in tailoring and garment design. This was resonated in participants' discussions with the researcher;

One female trainee held that;

"We do not get adequate skills related to communication, creativity and critical thinking which I believe are important for our competences, she said."(Interview date: February, 2018)

Relatedly, one of the instructor emphasized the need to improve on other skills like embedding ICT, analytical, and decision making with in the teaching and learning of tailoring and garment design at the institution. He said;

"It is important for trainees to be introduced to such skills like ICT, analysis and decision making so that their training is not only made interesting but also desirable, as embedding these skills would render a graduate more relevant to the world of work." (Interview date: February, 2018)

The institution has a computer laboratory with well-functioning computer sets that were used to help learners in organizing their work. However, using the technology as a resource for learning requires not only functional computer sets but also a well facilitated internet connection, and appropriate software for fashion design. These could not be afforded within the short time stipulated for this research due to the weak funding base from the few students. The stakeholders in their discussion suggested the administration to consider internet services as priority among the long term items for teaching and learning of TGD. Figure 8 and 9 shows the computer laboratory and the internet Wi-Fi equipment respectively, that were installed to aid learning.

Figure 8: Computer sets for pattern drafting in TGD at Kaliotte

Source: Primary data, Kaliotte, 2017

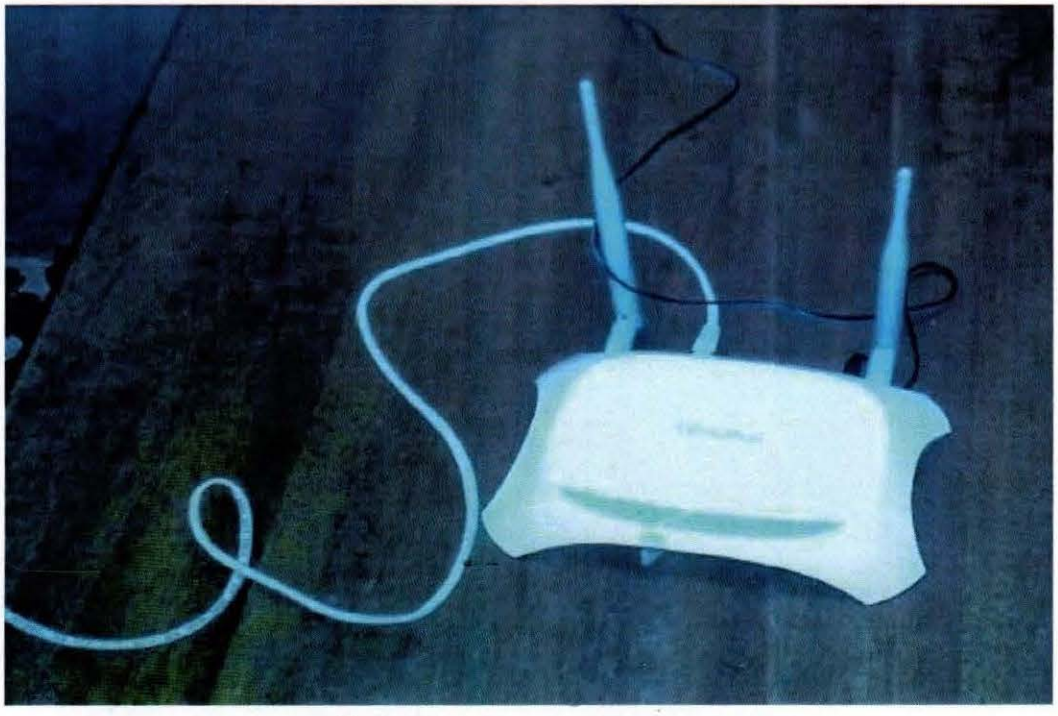


Figure 9: Router for internet connection

Source: Primary data, Kaliotte: 2018

Other materials, tools, and equipment like tape-measures, rotary cutters, drafting papers, over-lock machines, sewing machines, pencils, T-squares, L-square, were necessary for learning in TGD. Students were required to provide some of the materials and tools like tape measures, drafting paper, tracing wheels, pencils and French-curves in order to give them responsive skills for world of work while the institution was required to provide the equipment and machines. For example, the institution had in place six (6) sewing machines, T-squares, L-squares, and half a ream of drafting paper. In the workshop, one sewing machine is normally dedicated for the instructor to demonstrate the activity, as seen in Figure 10, while the remaining five (5) sewing machines are used by students for their practical exercises.

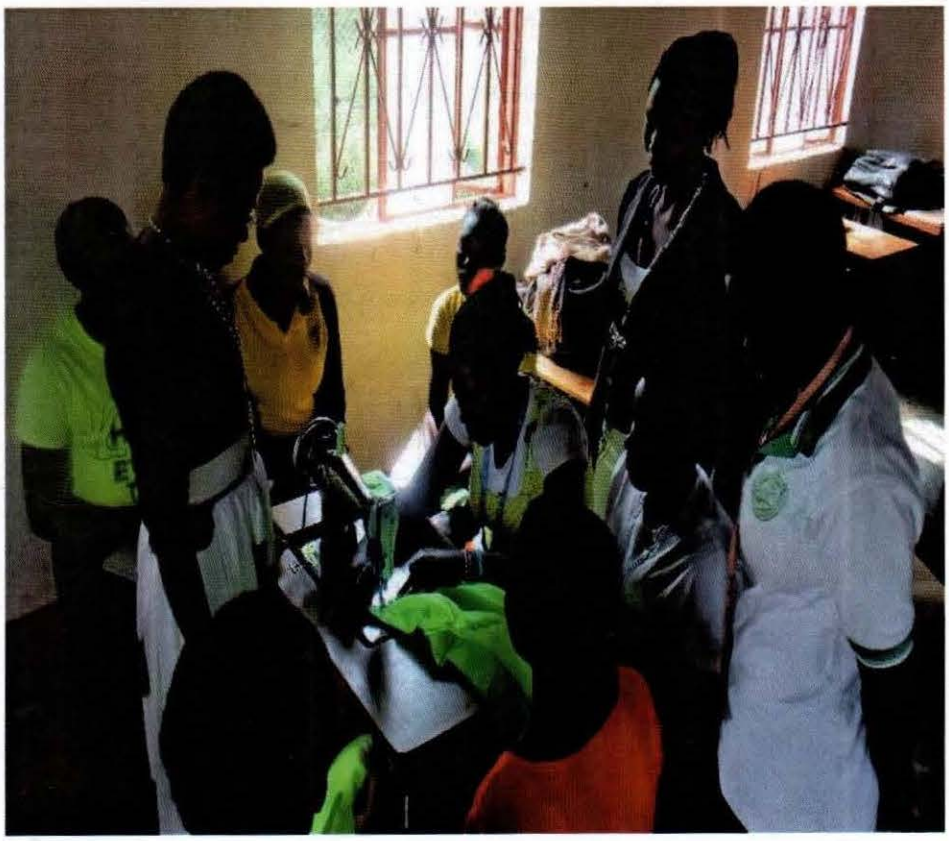


Figure 10: Instructor demonstrating how to join patterns

Source: primary data, Kaliotte, 2018

4.2 Implement improvised materials to enhance pedagogical skills of instructors in TGD at Kaliotte

The improvised instructional materials collected by stakeholders guided them in lesson planning, setting the competences for the tasks to perform, what the instructor using for demonstration as the learners was observed in the teaching. It was the same materials that the learners were to explore either through imitation, trial and error or other learning techniques rather than only observe, Figure 10. These materials were then explored by stakeholders in microteaching as a strategy to improve pedagogical skills in TGD approved and proper schemes of work and lesson plans. With the tools and materials available, stakeholders could now take body measurement, draft patterns on paper, cutting the pattern on fabrics to scale, sew them. These were presented for evaluation on display.

At Kaliotte, lesson plans and schemes of work obtained carried contents with more than one objective, which meant that the learning outcome required more instructional materials. The lesson plans used indicated all these instructional materials but all end up in paper work. With the little available, teachers demonstrated with the available as learners watched without further practice. The learners were rarely guided due to lack of instructional materials and assessment hardly done but evaluation was carried out after every course unit. For instance, the schemes of work and lesson plans bear main objectives and specific objectives for which the outcomes were at the end of the lesson, a product of the process thus, summative assessment. Statements like *'By the end of the lesson....'* were common in all schemes of work and lesson plans collected during data collection, as seen in Figure 11.

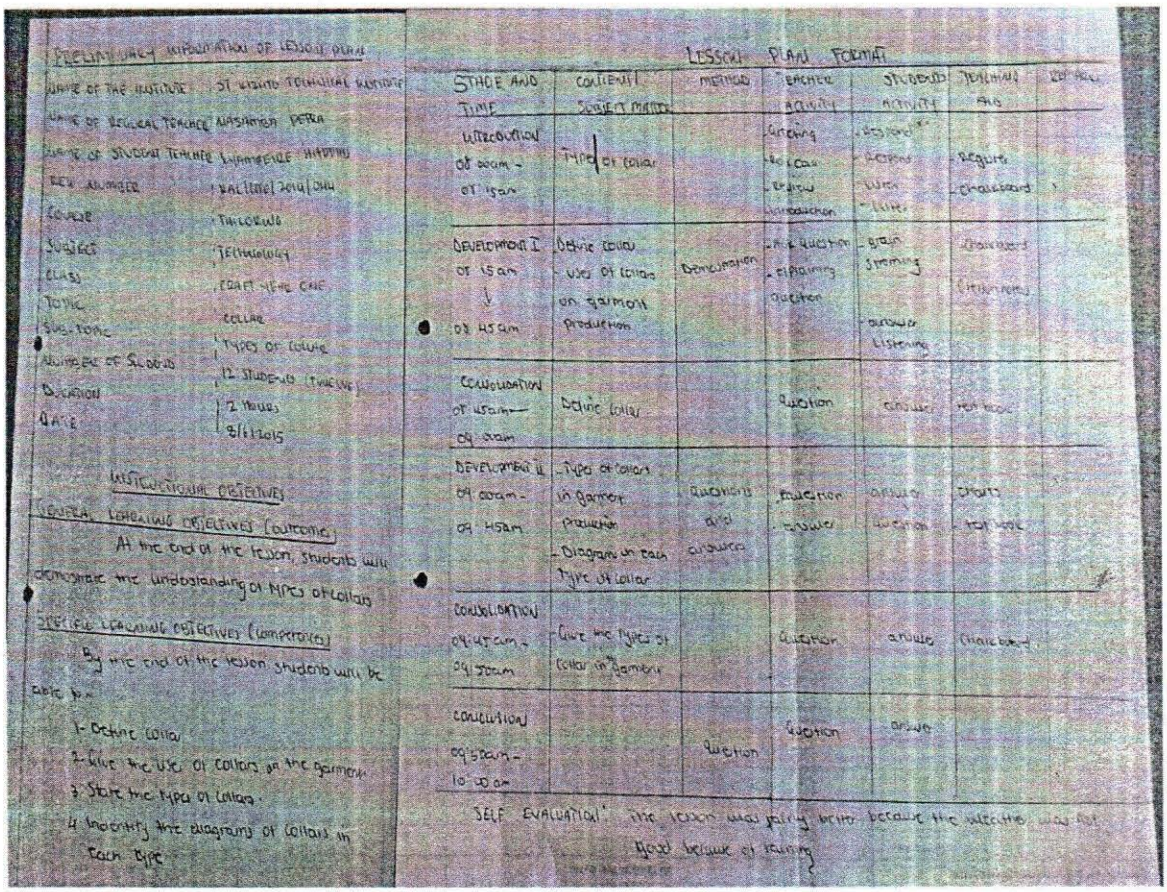
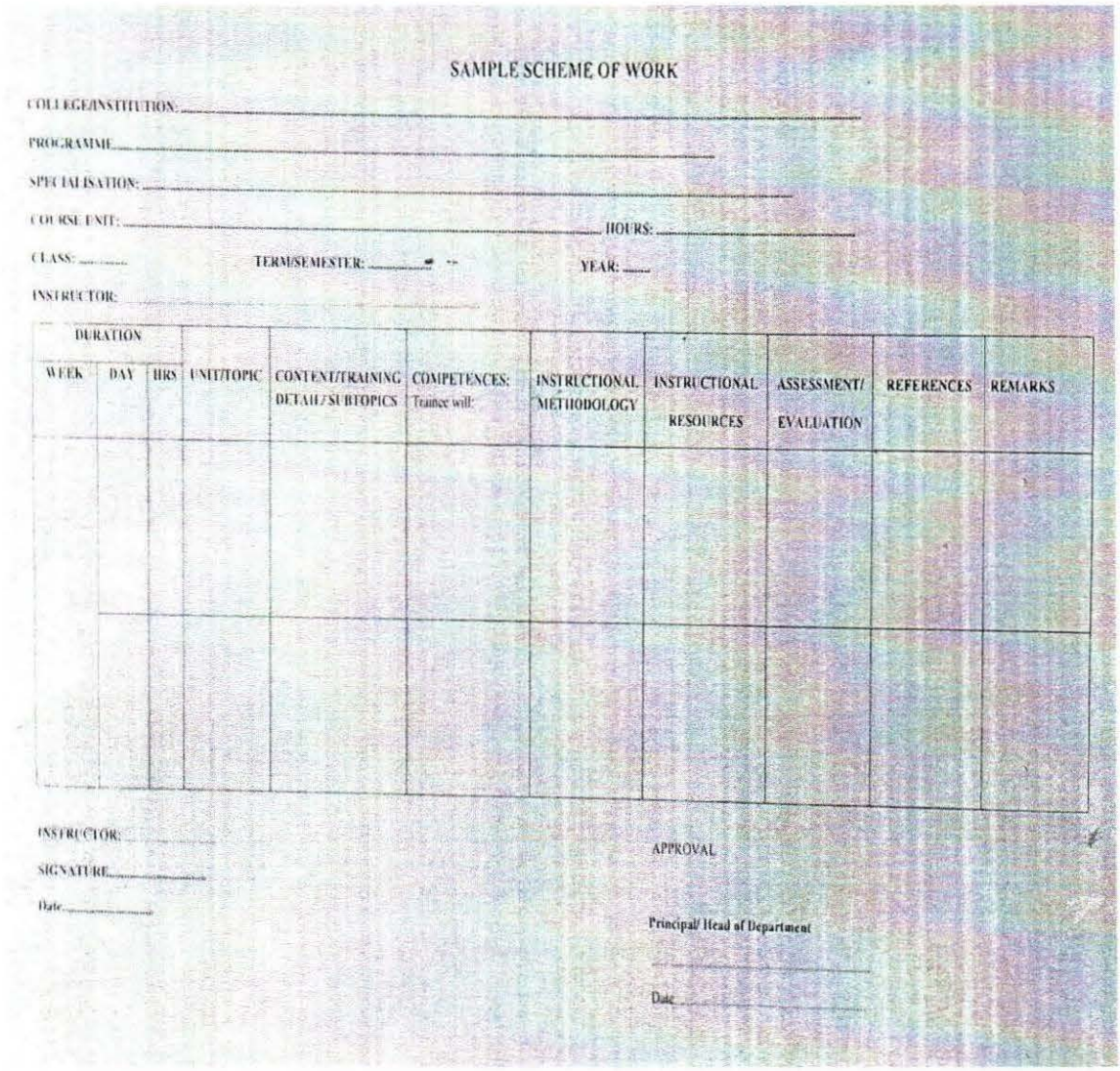


Figure 11*: showing a sample of the lesson plan adopted b Kaliotte*

Source: Primary data, Kaliotte, 2018

Contrary to the conventional scheme of work and lesson plan templates, the stakeholders got the scheme of work and lesson plan templates (see figures 12 & 13 respectively), approved by TVET and TIET which were based on competences of the instructor trainees to plan their lessons on body measurement in TGD.



SAMPLE SCHEME OF WORK

COLLEGE/INSTITUTION: _____

PROGRAMME: _____

SPECIALISATION: _____

COURSE UNIT: _____ HOURS: _____

CLASS: _____ TERM/SEMESTER: _____ YEAR: _____

INSTRUCTOR: _____

DURATION			UNIT/TOPIC	CONTENT/TRAINING DETAIL/SUBTOPICS	COMPETENCES: Trainee will:	INSTRUCTIONAL METHODOLOGY	INSTRUCTIONAL RESOURCES	ASSESSMENT/ EVALUATION	REFERENCES	REMARKS
WEEK	DAY	HRS								

INSTRUCTOR: _____

SIGNATURE: _____

Date: _____

APPROVAL

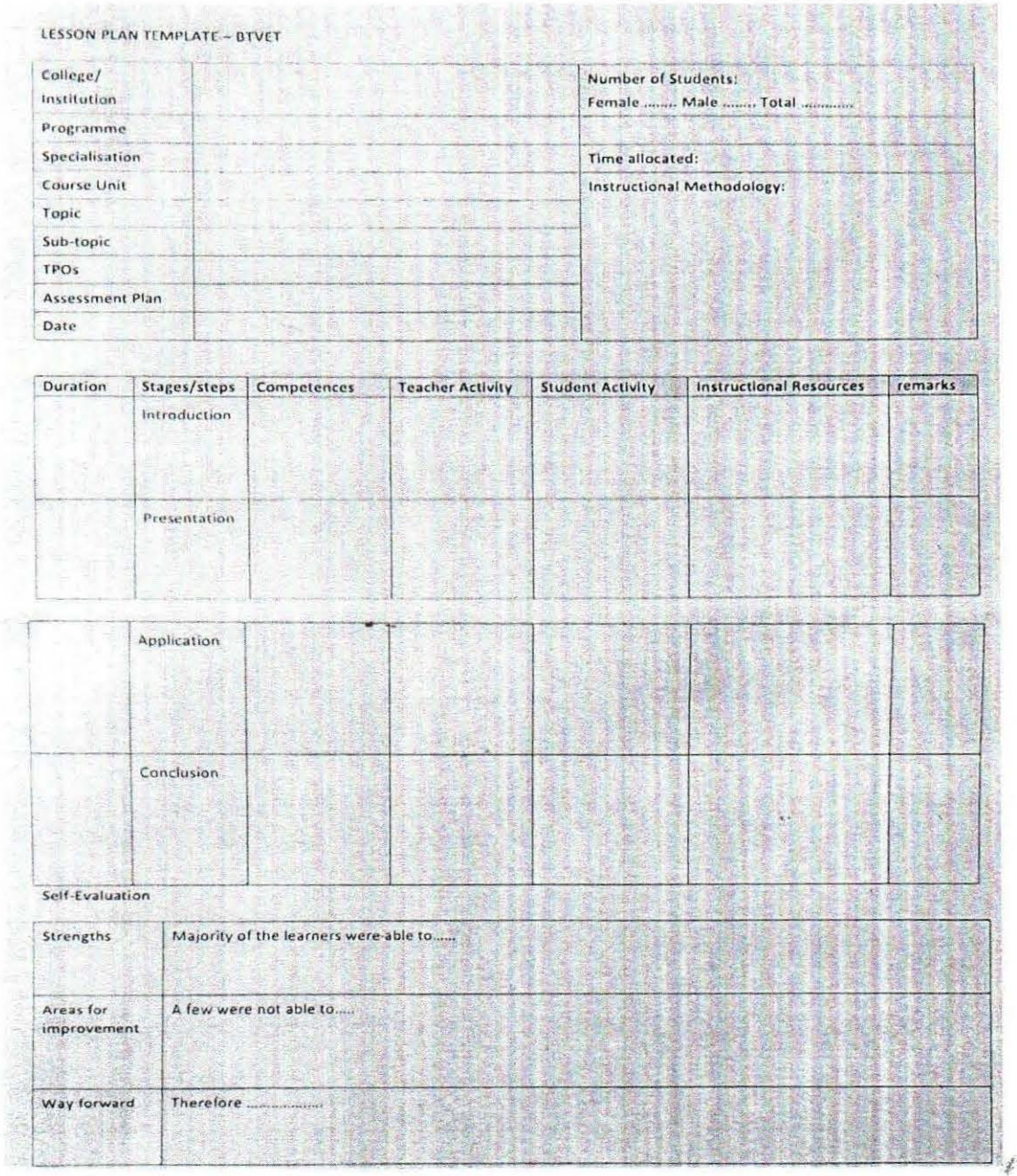
Principal/ Head of Department

_____

Date _____

Figure 12: *Showing a sample of adopted scheme of work approved by BTVET*

Source: Primary data, Kaliotte, 2018



LESSON PLAN TEMPLATE – BTVET

College/ Institution		Number of Students: Female ..... Male ..... Total .....
Programme		
Specialisation		Time allocated:
Course Unit		Instructional Methodology:
Topic		
Sub-topic		
TPOs		
Assessment Plan		
Date		

Duration	Stages/steps	Competences	Teacher Activity	Student Activity	Instructional Resources	remarks
	Introduction					
	Presentation					
	Application					
	Conclusion					

Self-Evaluation

Strengths	Majority of the learners were able to.....
Areas for improvement	A few were not able to.....
Way forward	Therefore .....

Figure 13: Show*ing A sample of a lesson plan adopted and approved by BTVET*

Source: Primary data, Kaliotte, 2018

Each instructor trainee was given two copies of scheme of work templates and four copies of the lesson plan templates to use during the six weeks of microteaching sessions. From four microteaching sessions with stakeholders, instructor trainees practically demonstrated their use of the templates to plan lessons with the researchers' guidance. The concept of basic

design content was then narrowed to learning outcomes of 'taking body measurements' in a microteaching session of 10 minutes per instructor as seen in (Figure 14).

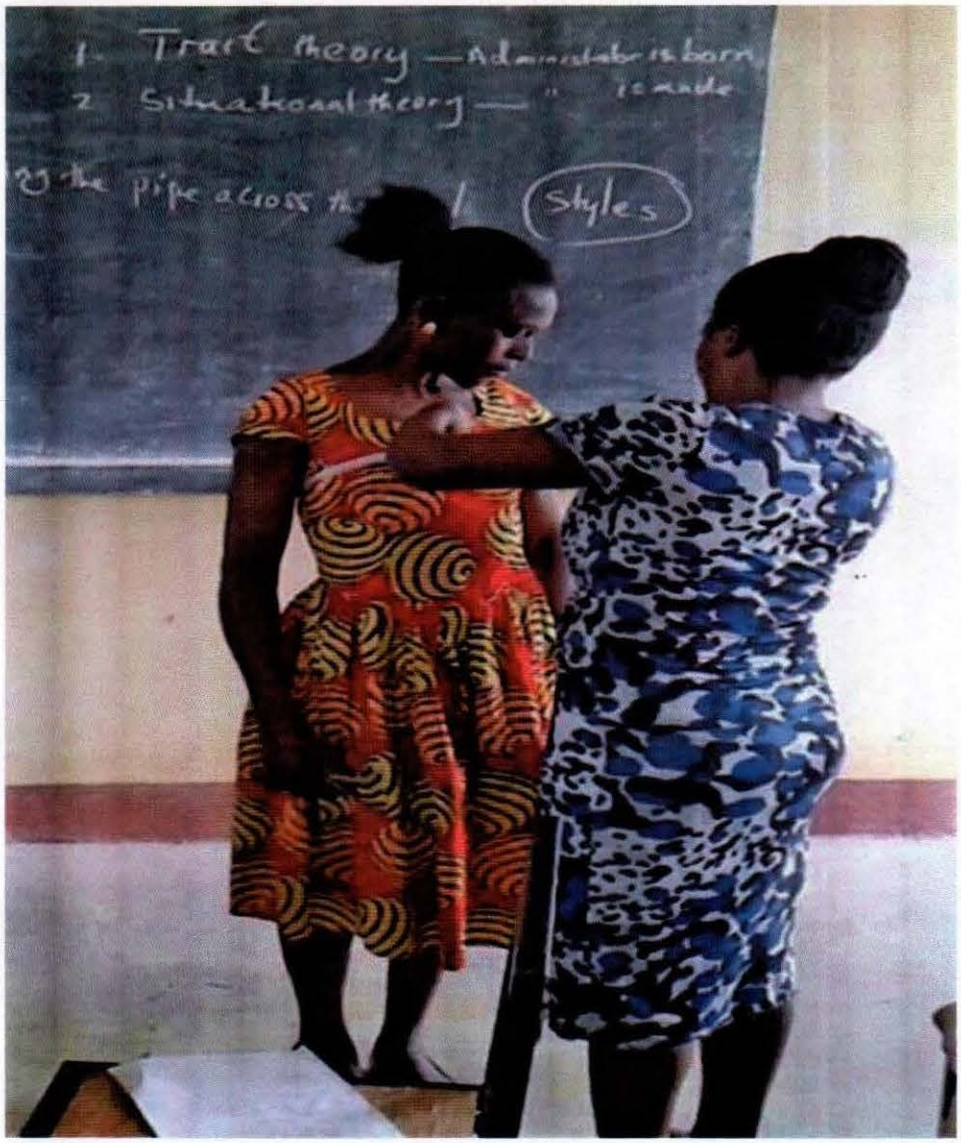


Figure 14: *Learning to take direct body measurement during microteaching at Kaliotte*

Source: primary data, Kaliotte, 2017

It should be noted that before the study, students were encouraged to use body measurements from textbooks. This process of learning body measurements, is rather rigid and impractical in a sense that learners cannot adjust easily to the real body measurements in life situations,

during pattern drafting and grading. This was highlighted by one of the female trainees, she held that;

"Throughout our training, we were subjected to using measurements from the textbooks. I found this odd as I knew that I needed to measure a real person to know how measurements can be applied in garment design and construction." (Interview date: November, 2017)

To improve on their past knowledge of using measurements from textbooks, the trainees were encouraged to take the risk of using real body measurements for making garments. This was done through group work where a number of trainees teamed up each one measuring the other, as highlighted in *figure 15.*

Figure 15: *Taking direct body measurement under supervision during microteaching*

Source: Primary data, Kaliotte 2017

The measurements taken were subjected to pattern drafting using paper and pencils as materials and tools respectively. This was intended to give a visual image of the garment that the learners were constructing. Learners developed skills in measurement, interpretation of symbols, drawing, and material use, which are vital to the competence development in tailoring and garment design instructor. Further, students developed interpersonal and communication skills through sharing of ideas and knowledge between themselves as well as the instructor. An example of the drafted designs from students is highlighted *in* Figure 16.

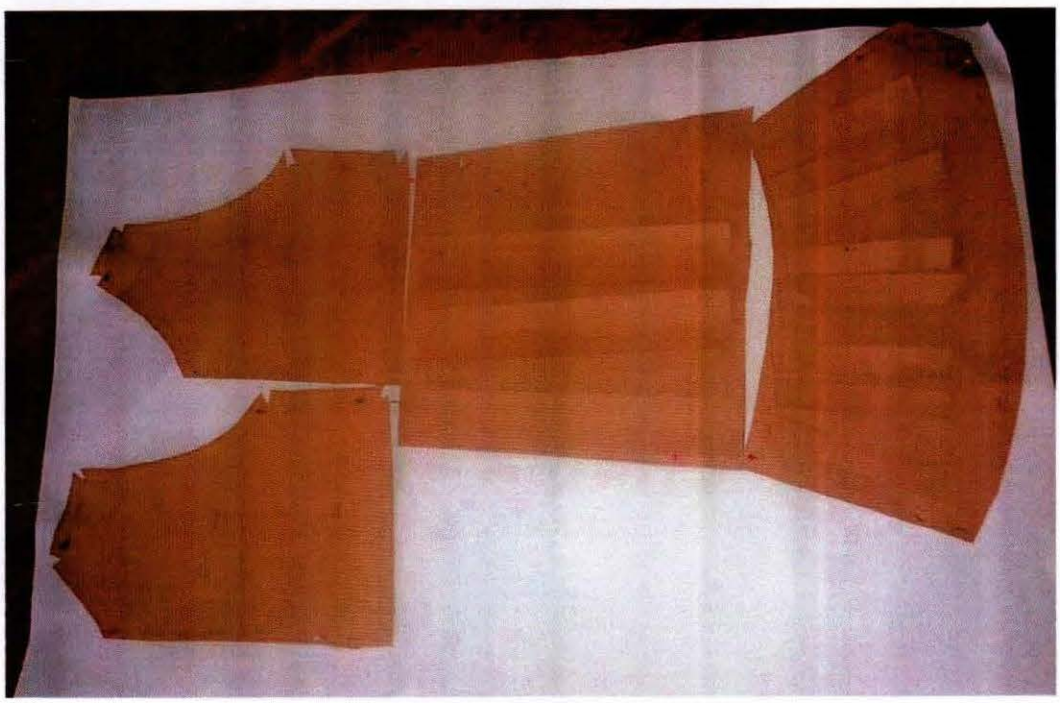


Figure 16: *Drafted design of Pattern*

Source: Primary data, Kaliotte, 2018

The drafted designs were cut from the fabric for garment construction using sewing machines. Each student cut out a design from the patterns and joined them to produce a garment. It is from these garments that the skills of drafting, cutting, and constructing were assessed. During and after the microteaching, formative assessment was done for purposes of correcting errors that arose during the implementation process. All trainees participated in

these processes that echo the action process; plan, act, observe/reflect and evaluate which was reflected in teaching implementation-plan, teach, observe and evaluate the impact of instructional materials. Some of the final items produced by trainees in the microteaching sessions are seen in *Figures 17 and 18*.

Figure 17*: Dress made on 1/4 scale from scrap fabrics*

Source: Primary data, Kaliotte, 2018

Figure 18*: Hand bag -200mm by 150mm made from scrap fabrics*

Source: Primary data, Kaliotte, 2018

4.3 Evaluation of the impact of microteaching on pedagogical skills of instructors in TGD at Kaliotte

The evaluation of the impact of this study was based on the feedback that was generated from participants highlighting how they benefitted from the activities conducted before, during, and after microteaching. Some respondents used checklists to evaluate the impact of the intervention on pedagogical skills, while others simply gave their narrative evaluation as reflections on the impact on improving their pedagogical skills. The subsequent sections present the relevance of instructional material use, and the impact of theory and practice employed to improve pedagogical skills in TGD during training at Kaliotte.

4.3.1 The relevance of instructional material use in skills training of TGD at Kaliotte

Tailoring and garment design is a practical subject that requires instructional material use during training in order to gain a hands-on skills. This study focused on creating strategies that would not only make instructional resources available for training but also ensure that they are used appropriately. Kaliotte is one of the vocational training institutions that has for a while engaged trainees who end up being absorbed in the world of work to offer their expertise both on training as instructors and as experts in Tailoring workshops. It is therefore important to equip these trainees with relevant skills and competences required in the world of work. The evaluation process that included responses from interviews, discussions, and observations, and attitudes of trainees towards resource mobilization and use. This process revealed that majority of the respondents held that they were able to find strategies that helped them mobilize and access some of the required resources in their training. One of the strategies that was appreciated by the trainees, was improvisation, where trainees acquired offcuts "cabbages" from professional tailors in the world of work. This not only exposed them to what actually is done in the world of work regarding tailoring and garment design

processes as entrepreneurs, but also helped them to relate how improvisation can be used as a strategy of training.

The challenge of financial constraint that fundamentally affected the day to-day activities of training arises from the fact that Kaliotte is a private institution whose main source of funding was the tuition collected from trainees. According to administrators of the institution, trainees took a lot of time to complete payment of tuition during the semester. This consequently affected the budgeting process for procuring the required materials for training. Stakeholders collaboratively engaged through participatory action to mitigate the challenge through finding alternatives that would ensure that trainees acquire the necessary training needed to implement tasks. Participants suggested a cost-sharing approach between the institution and trainees, which was a basis for bringing together some of the required equipment, tools and materials for training. As such trainees contributed towards the procurement of "cabbages", marking tools, and some of the simple tools for cutting and drafting, including paper for training.

Kaliotte has a set time schedule for the activities within the semester that instructors and trainees follow. The training activities are guided by the timetable which has standard time for learning through practice. However, the time set for training is insufficient for trainees to explore, reflect, assess, and evaluate their own learning potential. As such, the study engaged participants to utilize the extra time beyond the timetable to include training sessions within the week and during the weekends. Trainees committed to utilizing this time to through group work. Some of the tasks that were not completed during the training sessions were finalized during the extra hours. The researcher on the other hand observed the activities and took notes to support research objectives set.

4.3.2 The impact of instructional materials employed to improve pedagogical skills during training, in TGD at Kaliotte.

Collected data during teaching and learning revealed that there was more theory being taught at *Kaliotte* in tailoring and garment design than practice. For a vocation training programme to be successful, it is important for trainees to engage in sufficient practical experiences as this would enable them relate theory and practice of the aspects they are being introduced to. One of the aspects that this study focused on was to engage trainees to sufficient practicum. The study registered a number of positive responses from the trainees regarding their practical experiences. This was highlighted in one of the trainees' discussions, saying that,

"Before, I hardly had enough time to do practice on aspects shared by my instructor, however, the training has helped me to engage effectively in tasks and teamwork. I take charge of my learning." (Interview date: November, 2017)

The study activities greatly impacted on trainees attitudes towards training. Some of the activities in teaching required trainees to form groups and share ideas. This greatly improved on their fears in communicating in front of the audience. Some of the challenges trainees faced during the training, were shared within their groups and together with their peers, sought for solutions. This helped them to build self-esteem and consequently accomplish their tasks, as one female trainee highlighted;

"I can interact with learners and express my ideas better than before. I have built self-esteem now and can accomplish goals. The training has also helped me in my interpersonal relationship with my colleagues and can now train others more effectively", (Interview date: February, 2018)

In Tailoring and garment design training, trainees learn mathematical skills that aid in taking body measurements, drafting patters, and costing materials. These skills are enhanced by employing ICT, through the use of computer sets and internet as a resource. Trainees are exposed to various designs, concepts, processes, materials, tools, equipment, and the current

fashion design practices within the TGD field. Trainees recorded a great deal of improvement in the way they approached their training through the use of the ICT resources available at Kaliotte. One of the trainees remarked that;

"It has helped me master basic computations in life in body measurement and drafting, costing and making estimates'. And "I can also seek information, analyse, and manage it critically and intelligently using ICT as a resource." (Interview date: February, 2018)

Further still, use of ICT helped learners improve on skills such as; drawing, precision, drafting, colour selection and rendering. This enabled trainees to perform various training tasks that initially took a lot of their time. This made their learning interesting and meaningful.

The study helped learners develop critical thinking and personal reflection skills. Trainees held that it was hard for them to question their own learning. This study enabled them to ask questions relevant to their learning, gather, process, and apply information. They further considered implications of the different discussions they undertake during their training. This is highlighted in their juxtaposition of their previous learning processes and the training they undertook during this study. Through their voices, a trainee held that;

The training has helped me to use my thinking skills to solve difficult tasks and determine best course of actions for pattern grading as well as drafting.

Another trainee said;

"This training has helped me improve on my creativity while drawing meaning from available data. I can now take body measurements from live figure and draft a dress from measurements taken. It has also helped me improve on my critical thinking, problem solving, and improved my writing skills." (Interview date: February, 2018)

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a discussion on the research findings according to personal views on results from implementation of strategies that were developed. I used my personal observations, reflections from respondents, and literature from various scholars on the same concept. Relevant conclusions and recommendations were highlighted.

5.1 Discussion of findings

To explore instructional material strategies to enhance pedagogical skills of second year instructor trainees in tailoring and garment design at Kaliotte, to implement improvising and microteaching, as strategies to improve the pedagogical skills of instructor trainees' in tailoring and garment design at Kaliotte, and to evaluate the impact the same strategies had on the pedagogical skills of instructor trainees in tailoring and garment design at Kaliotte.

5.1.1 Exploring Instructional material to enhance pedagogical skills of instructors in TGD at Kaliotte.

The data collected on instructor trainees and the lecturers profile during FGD indicated that most of the instructor trainees appreciated the value of improvising and microteaching in order to enhance their teaching skills. The data indicated that 67% of the trainees lacked competencies for teaching in TGD at Kaliotte at the time of admission. This was because of the students' direct admission from advanced craft level without attending any Certificate in Technical Teacher Education (CTTE) course. Since most of these students had not done CTTE course, they only were aware of demonstrating with standard instructional materials most of which are available on the retail market, as seen in figure 19. They were not exposed other learning techniques like trial and error, enquiry and real problem solving with available instructional materials. Learning was passive on the side of instructor trainees as they were

not encouraged to research outside what was in the curriculum and taught in terms of content, materials and the functionality of the products. They could not relate the materials in use with those in world of work and generate alternative materials to sustain the training. The trainees were not expected to question what was studied. Despite the instructors' competences in didactic teaching skills, they could not adjust to meet the challenge faced with inadequate instructional materials as they were used to training with standard materials. Through focus groups that were formed in this study, it was possible for the instructor trainees to explore available resources like fabric wastes, second hand clothes, and bark-cloth at Kaliotte for use in microteaching. Relatedly, the respondents conceded that individually, it was not possible for them to get the materials easily nor work on the schemes of work and lesson plan templates previously in use for vocational theory, based on traditional lesson scheming. The tradition of the teaching was to emphasize grade of the best performers rather than consider the performance on particular stages of performance, which are critical for learning in a vocational setting.

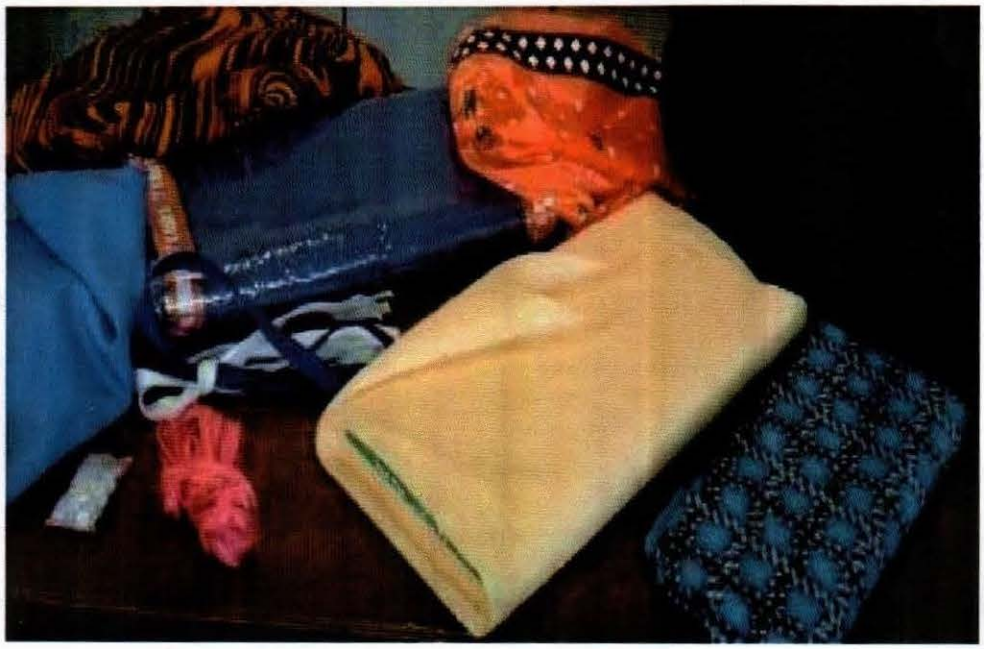


Figure 19: Standard Instructional Materials-Fabrics

Source: Primary data, Kaliotte, 2018

One of the trainees' pressing challenge was in using the instructional tool of lesson plan in a TGD microteaching lesson. These instructor trainees with guidance of instructors as supervisors, had to deviate from the traditional objectives to competences and use "verbs" in place of "nouns" to observe the skills that arise from them. During the microteaching sessions, formative assessment areas were noted, and the feedback for the lessons were received from stakeholders after the teaching. This feedback was collectively made by the instructor trainees in trial sessions and referred to as formative assessment. These assessments were meant to enable instructor trainees take note of their weaknesses and find remedies to them for improvement in forthcoming lessons planned. Nicol and Macfarlane-Dick (2006) encouraged this form of assessment in microteaching for instructor trainees to improve their development capabilities and attitudes for lifelong learning. At Kaliotte, some instructors were still confused due to failure to distinguish when to assess and evaluate as they were used to summative assessment.

Microteaching through a learner centred learning environment and reflective learning theory, recognised the previous knowledge of the respondents in order to build onto the prior skills. It was the role of Kaliotte's teaching staff to create conducive learning environment with adequate materials through improvisation if teaching skills were to improve at all. The team that was created in focus group discussion influenced the learning environment for discussions and doing tasks. These tasks in turn, gave rise to learning approaches that improve the instructor trainees' teaching-learning skills like cooperative and peer learning.

The attendance forms assessed revealed that the instructor trainees were not able to get adequate attention from the instructors on teaching skills. The lecturers responsible for the core pedagogical units of TVET methods and Educational Technology were irregular in attendance as the data from the field revealed. Also, the lecturers could not clearly

demonstrate the teaching skills as well due to lack of instructional materials besides being part-timers.

5.1.2 Implement identified strategies so as to improve the pedagogical skills of Instructors in TGD at Kaliotte

The stakeholders identified use of improvised instructional materials and microteaching as strategies to improve the pedagogical skills of instructor trainees in TGD at Kaliotte.

The lack of instructional materials made the participants focus on scrap fabrics for getting materials for their practice through improvisation. Though many traditional teachers would regard these materials as waste, the instructor trainees and lecturers of TGD found them a cost effective source of material. While a roll of poplin costs Ushs. 60,000/=, a sack of scrap fabric which had different fabric samples only cost Ushs. 25,000/=. These waste materials provided instructor trainees with creative knowledge during this crisis period. The same study made the participants learn the value of cooperating and collaborating with communities around Kaliotte. The interactions with tailoring workshop managers around Kaliotte made the trainees of TGD to gain the interpersonal skills in their practice of teaching and learning environment. Other areas for sourcing were purchasing second hand clothes from open markets at nearby towns of Kyaliwajjala and Nakawa.

The instructor trainees also carried out mini-lessons within the group using the materials they had gathered. The learning outcomes of the micro-lessons were reduced to a time of 10 minutes for purpose of learning how to teach in a controlled environment under supervision of the resident director who is a curriculum specialist and lecturer for TVET specific methods which had the contents of microteaching. In the process, we planned six weeks' scheme with a lesson every week. The first micro-lesson was on body measurement. All the six female participants paired in turns to take five direct measurements each of a long sleeved dress. In the group, the participants individually presented their direct body

measurement processes while the rest observed and recorded the strengths and weaknesses of the process to get a remedy.

The stakeholders identified skills that they required when teaching and learning direct body measurements. Noticeable in the process was the flexibility of the process and decisions taken by the instructors. As body measurement was learning by doing, the instructors were able to discover on their own why they enjoy or hate taking body measurements based on Dewey's theory of 'learning by doing'. The theory had the constructivist component of learning through the active process in which Seymour Papert considered that lecturers should reduce the amount of teaching but increase trainees' projects for practice. Where there were no materials for teaching for instance, stakeholders searched for improvised scrap fabrics to make samples of garments to ¼ scales. Then the instructor trainees had to work in groups or in pairs as peers to ease the training process. The teaching staff ensured that the available instructional materials were frequently used in microteaching practice on weekly basis to improve on the teaching skills.

As the instructor trainees became responsible for their learning, they were able to challenge the status quo of their own practice. Actually one instructor trainee in TGD commented that, after her microteaching, the question "How can I improve on what I am doing" (Wei, 2015) kept on coming repeatedly in mind. Descombe (2014) argued that this process should not only be used to gain better understanding of the problem in microteaching which happens in everyday life practice but sets means to alter them.

5.1.3 Evaluate the Impact of improvised instructional materials on Pedagogical Skills of Instructors in TGD at Kaliotte

The results of the study during evaluation meeting revealed that pedagogical skills of the second year instructor trainees could not be improved with the theory lessons being carried out at instructor training institutions. They conceded that microteaching was indeed a real teaching situation that enabled them plan how to identify challenges in a lesson content, work within limited timeframe due to the learning outcome that they set with the limitations of instructional materials at Kaliotte.

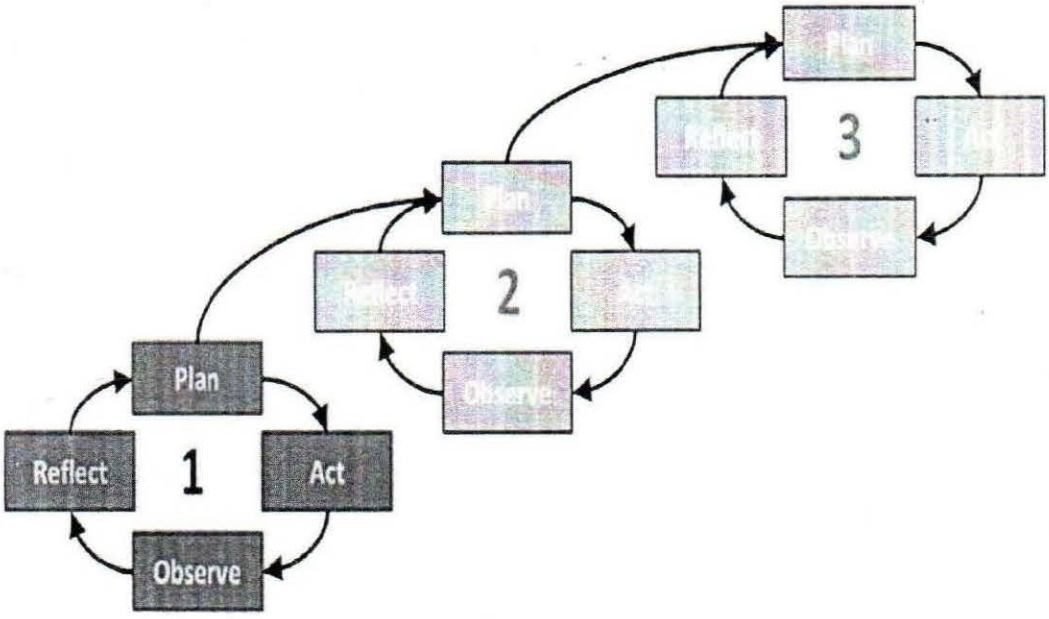


Figure 5. Action research cycle

Source: Adapted from (Coghlan, 2010)

The research followed the cycle of Action Research to teaching in order to develop problem solving skills; plan, act, observe, and evaluate; re-plan, react, reflect, and reevaluate as seen in figure 5. This cycle explained the entire process as being constructive due to the planning,

acting, observing, and reflecting that paves way for another cycle in the spiral of teaching and learning.

Trainees at the start of teaching practicing took notes on the skills applied, tools used, and how techniques were employed during a teaching session. This was through, direct observation of teaching skills, role plays, simulations, or case studies at Kaliotte. As the study progressed, participants developed competency-based checklist by breaking down the teaching skills and activities to be taught into its essential steps. Each step was analysed to determine the most efficient and safe way to perform and learn it in microteaching. In addition to using checklists to learn skills in microteaching, instructor trainees kept track of progress in the teaching area by referring to past checklists. These checklists contained enough detail to permit the trainees to evaluate and record the overall performance of the skill or activity.

Implementation process involved choosing and using the instructional materials to demonstrate how to teach and learn so as to improve on skills of decision making, communication through constant practice. During demonstration of microteaching, the various teaching techniques were playfully used in tailoring and garment design; Observation of skills, learning by doing, trial-and – error, interviews, surveys, and testing knowledge were checked. Lastly, together with stakeholders, the training was evaluated to determine whether the learning outcomes of the research were achieved, to assess the value of training programs, identify areas of the research that need improvement, identify the appropriate audience for future programs, review and reinforce key programme points for participants, and market the program to other institutions. The study also exposed how improvised materials can be explored to work with to make neckties within 20 minutes' timeframe per instructor trainee.

As pre-service instructors, the practice reduced the complexities of anxiety that the real classroom teaching situation would provide in terms of the students' number who were only six in number. This strategy made the instructor trainees concentrate on mastery of teaching activities like skills of communication, collaboration, creativity and flexibility with resources.

The second year instructor trainees even became more keen in taking control over their practicing activities; planning, teaching, assessment and re-planning, re-teaching and reassessing. The instructor trainees were able compare the traditional - theoretical teacher centred teaching skills with the constructivism-practical learner teaching skills. The feedbacks from microteaching were found to be more constructive from the learners than the traditional teacher centred evaluations on use of instructional materials. The technique provided instructor trainees in TGD with opportunities to master teaching skills under controlled environment. It gave instructors confidence, support and feedback by allowing instructor trainees try out among peers a short segment of what plan to teach from body measurement to garment construction (Ifegbo, 2012; Wei, 2015).

Since microteaching is cyclic in nature like action research, the research tools in the study guided in confirming that interview guide, questionnaire and observation checklist all indicated deficiency of instructional materials affected the skills delivery to prove the study's validity. The results were triangulated through continuous assessment with the participants by reflecting on the available data to confirm their authenticity (Crewell, 2014).

5.2 Conclusions

This study concluded that instructor trainees appreciated the value of knowledge and skills acquired through use of improvised instructional materials and microteaching to improve their pedagogical skills. However, inadequate instructional materials, inadequate teaching practice, ineffective assessment, poor communication and poor learning environment were identified as

hindrances to enhance pedagogical skills of the instructor trainees in tailoring and garment design. Though there was more theory taught to the instructor trainees without exploring the available instructional materials to expose them to the teaching and learning skills in TGD within reach of Kaliotte, there was no need to balance theory with practice.

Besides, reliance on standard instructional materials tended to obstruct the creativity of instructor trainees to explore their potential of using other instructional resources and techniques. It was only through collaboration and teamwork that Kaliotte trainees sustained the challenge of affording and availing instructional materials needed in TGD, through improvisation and microteaching. The practice showed that it was possible to change the attitude of trainees through microteaching as complexity of teaching were minimised to one learning outcome at a time.

The practice of collaboration in searching for alternative sources of instructional materials, creativity in manipulating the instructional materials for practice and planning through improvisation on instructional materials and microteaching. This training enhanced the new instructors learning and learner centred practices, thus demonstrated the quality of instructors being trained and paradigm shift from teacher centred to learner centred training.

From the research, instructors who participated in the study groups and lesson –planning groups designed to improve teaching skills over time. Lecturers and instructors need to regularly conduct and write up research on their practice in the workshops. The lecturers and instructors also need to polish their lessons overtime with new concepts. By participating in lesson study groups during the research, collaborative groups were formed in which instructors and trainees planned, taught, critiqued, and revised their lessons.

5.3 Recommendations

The research recommends that instructor trainees admitted in instructor training institutions should be ready to explore on instructional materials with lecturers and peers to scaffold their teaching and learning skills.

The research recommends the management of Kaliotte and the other five instructor training institutions to look at their institutional departments as micro-laboratories for exploring instructional materials in their teaching and learning to improve on interpersonal skills. Workshops and seminars should be encouraged for lecturers and instructors through microteaching as they have the potential to identify challenges in their midst and turn the challenges to advantages with the meagre resources available.

The research recommends affiliated institutions in training instructors of TVE to start a "MICRO-TEACH" journal in which all instructors and trainees share their practices and experiences of teaching and learning with members of their community in the 21st century.

The research recommends Kyambogo University, TIET and DIT to organise a strong supervisory committee to ensure high quality human resource for TVET institutions. Instructor training institutions and community should set up pilot projects on income generating funds for improvisation of instructional materials for teaching in TVET.

Therefore, more research was needed in instructional materials to open instructor trainees to employable skills required in the 21st century.

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APPENDICES

Appendix 1: Introduction letter for Action Research

KYAMBOGO UNIVERSITY

P. O. Box 1 Kyambogo, Phone: 041-285001/2 Fax: 041-220464
www.kyambogo.ac.ug
FACULTY OF VOCATIONAL STUDIES
DEPARTMENT OF ART & INDUSTRIAL DESIGN
MASTERS IN VOCATIONAL PEDAGOGY PROGRAMME

28th September, 2017

THE DIRECTOR - RESIDENT
KALIOTIK P.O. BOX 26008 KLA.

RE: INTRODUCTION OF EDEKU BERLIN ANDAMA

This comes to introduce to you EDEKU BERLIN Andama a student of Masters in Vocational Pedagogy (MVP) Programme at Kyambogo University. This student bears registration no.16/U/14007/MVP/PE and in his final year. As a requirement for graduation, this student is expected to carry out Action Research through a collaborative process with World of Work.

Any support rendered to him is highly appreciated.

Looking forward to your usual support.

Yours Sincerely,

Pp

Chris Serwaniko
Project Coordinator, NORHED MVP Program
Masters in Vocational Pedagogy Program

Source: Primary data: 2018

Appendix

2: Future workshop programme

FUTURE WORKSHOP AT KALIOTTE ON15th February, 2018

A. FUTURE WORKSHOP

Future Workshop is a decision-making process for citizen groups with limited resources who want to have a say in their activities. It is a technique meant to shed light on a common problematic situation, to generate visions about the future, and to discuss how these visions can be realised.

According to Jungk/Müllert (1987), Pavelin (2014) and Oosthuizen (2016), a classic "future workshop consists of five phases.

1. Preparatory phase
2. Critical phase
3. Fantasy/utopian phase
4. Reality phase
5. Implementation phase

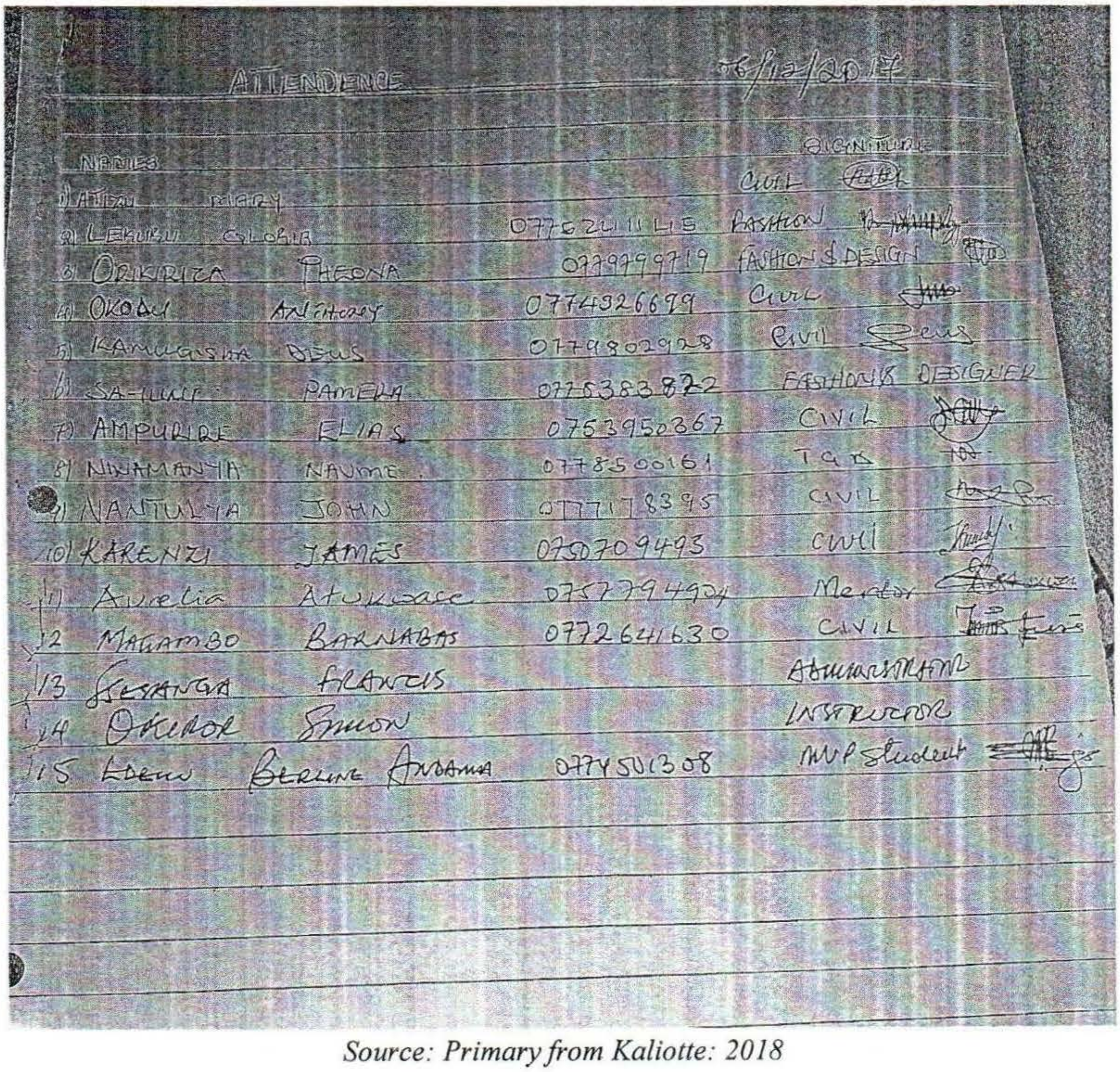
B. GROUND RULES

C. TIME FRAMES FOR THE WORKSHOP

1. GROUND RULES	5 MIN
2. CRITIQUE PHASE	1HR 30MIN
3. UTOPIAN/FANTASY PHASE	10MIN
4. REALITY PHASE	1 HR
5. IMPLEMENTATION PHASE	20 MIN
6. CLOSURE	5 MIN

Source: Primary data: 2018

3: Attendance list stakeholders meeting



ATTENDENCE 06/12/2017

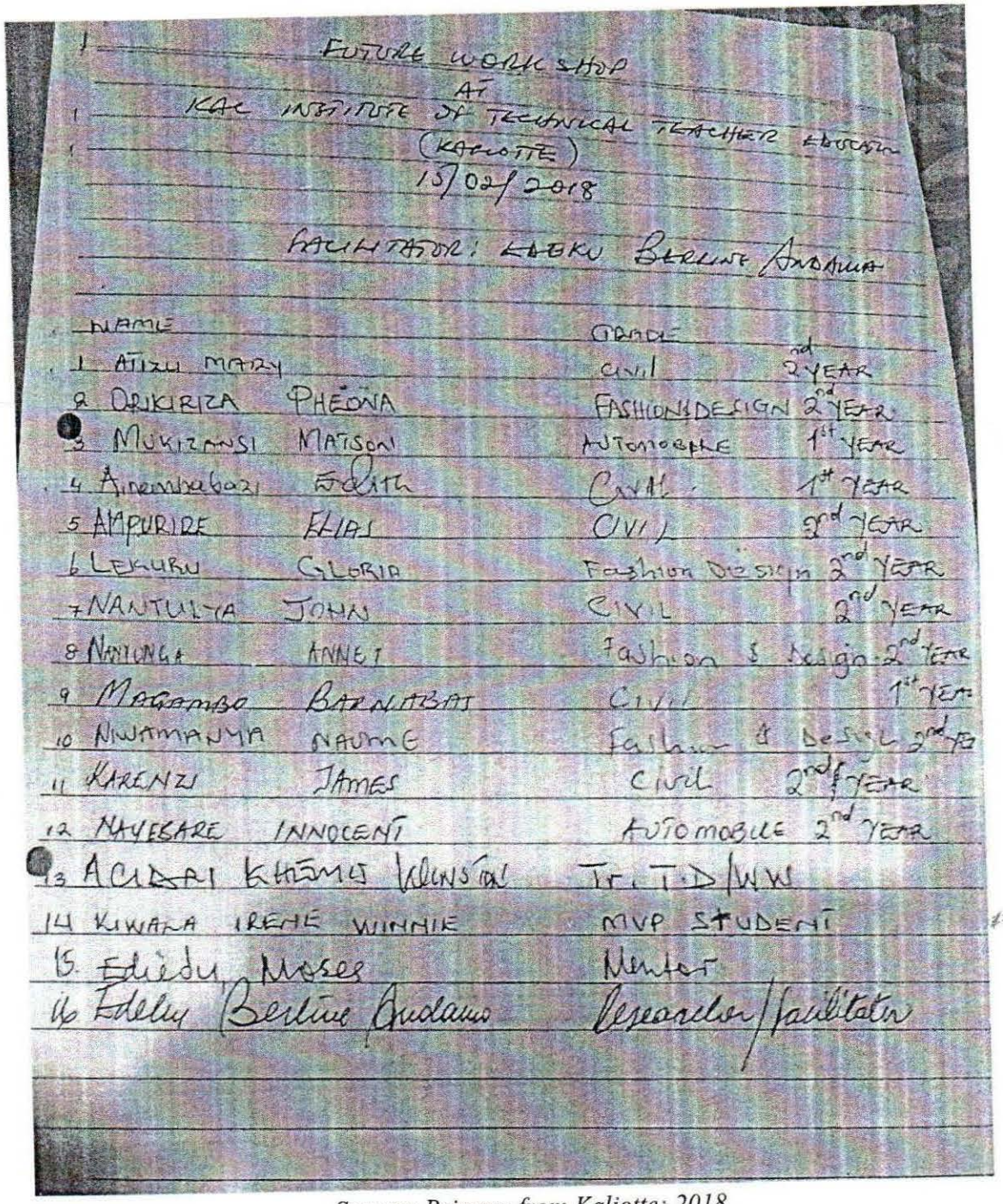
NAMES SIGNATURE

1) ATIZU	BIGGY		CIVIL	
2) LEKUBU	GLORIA	0776241145	FASHION	
3) ORIKIRIZA	PHEONA	0779799719	FASHION & DESIGN	
4) OKOAI	ANTHONY	0774326699	CIVIL	
5) KAMUGISHA	DEUS	0779802928	CIVIL	
6) SA-IUKE	PAMELA	0775383822	FASHION & DESIGNER	
7) AMPURIRE	ELIAS	0753950367	CIVIL	
8) NINAMANYA	NAUME	0778500161	TGB	
9) NANTULYA	JOHN	0777178395	CIVIL	
10) KARENZI	JAMES	0750709493	CIVIL	
11 Aurelia	Atukwase	0757794904	Mentor	
12 MAGAMBO	BARNABAS	0772641630	CIVIL	
13 SSESANGA	FRANCIS		ADMINISTRATOR	
14 OKIROR	SIMON		INSTRUCTOR	
15 Ederu	Berline Andama	0774501308	MVP Student	

Source: Primary from Kaliotte: 2018

Appendix

4: Attendance list for the Future Workshop at Kaliotte



FUTURE WORK SHOP
AT
KAC INSTITUTE OF TECHNICAL TEACHER EDUCATION
(KALIOTTE)
15/02/2018

FACILITATOR: EDEKU BERLINE ANDAMA

	NAME		GRADE
1	ATIZU	MARY	CIVIL 2nd YEAR
2	ORIKIRIZA	PHEONA	FASHION DESIGN 2nd YEAR
3	MUKIZANSI	MATSON	AUTOMOBILE 1st YEAR
4	AIREMBABAZI	EDITH	CIVIL 1st YEAR
5	AMPURIRE	ELIAS	CIVIL 3rd YEAR
6	LEKURU	GLORIA	Fashion Design 2nd YEAR
7	NANTULYA	JOHN	CIVIL 2nd YEAR
8	NAILUNGA	ANNET	Fashion & Design 2nd YEAR
9	MAGOMBA	BARNABAS	CIVIL 1st YEAR
10	NWAMANYA	NAUME	Fashion & Design 2nd YR
11	KARENZI	JAMES	CIVIL 2nd YEAR
12	NAVEBARE	INNOCENT	AUTOMOBILE 2nd YEAR
13	ACIDRI	KHEMIS KLINSTON	Tr. T.D/W.W
14	KIWANA	IRENE WINNIE	MVP STUDENT
15	Edeku	Moses	Mentor
16	Edeku	Berline Andama	Researcher/Facilitator

Source: Primary from Kaliotte: 2018

Appendix

5: Interview Guide for Instructor Stakeholders

Dear respondent

I am Edeku Berline Andama, a student of Kyambogo University, Department of Art and Industrial Design conducting research on the Topic: Enhancing the pedagogical skills of trainer of trainers with instructional materials in tailoring department. Case study of Kal institute of technical teacher education, Mukono District, Uganda. You have been identified as a respondent, please give your opinion without any reservation on the topic under study. The information provided is for academic purpose and will remain confidential. Therefore, I kindly request you to support me by responding to the interview guide.

Thank you..

Requests

1. In your opinion what are the factors that affect pedagogical skills enhancement of instructor trainees at Kaliotte?
2. Do you think there are possible strategies to improve pedagogical skills enhancement in tailoring at Kaliotte?
3. If yes, what are the possible strategies that you propose to improve pedagogical skills enhancement at Kaliotte?
4. In your view, how best can the implementation of identified strategies to improve teaching and learning skills of instructor trainees in tailoring at Kaliotte be done?
5. What impact does the strategies used on improving teaching and learning skills?

Thank you for Participating.

Appendix 6: **Focus Group Discussion Guide for Stakeholders**

Dear respondent,

I, Edeku Berline Andama, am a student of Kyambogo University, Department of Art and Industrial Design conducting research on the Topic: The role of instructional materials in enhancing the pedagogical skills of trainer of trainers in tailoring department. Case study of Kal institute of technical teacher education, Mukono District, Uganda. You have been identified as a respondent, please give your opinion without any reservation on the topic under study. The information provided is for academic purpose and will remain confidential.

So, I kindly request you to support me by responding to the focus group discussion guide. Thank you..

Questions

1. In your opinion what are the factors affecting enhancement of teaching and learning in tailoring and garment design department at Kaliotte?

2. Do you think there are possible strategies to improve teaching and learning skills in tailoring and garment design at Kaliotte?

3. If yes, what are the possible strategies that you can give to improve teaching and learning skills in tailoring at Kaliotte?

4. In your findings, in which ways can the implementation of recognized strategies to improve teaching and learning in tailoring at Kaliotte be done?

5. What are the effects of involvement strategies used to improve teaching and learning skills? Thank you for Participating

7: Future Workshop Guide

Preparation phase: - Set date/ venue, informed participants, stationary, refreshments

Critique phase: - Stake holders generate ideas while observing the rule of thumb - first idea generation, respect for every one's idea, short responses, and no criticism.

Utopia/ fantasy phase: - Turning all the negative ideas in the Critique phase into positive, assuming every situation to be possible, resources available to fix every problem Reality phase – This is the ideal situation, stakeholders point workable solutions within the available resources, subjected the pressing issues to pairwise matrix ranking to get the most pressing challenge.

Action implementation of the agreed strategies

Follow up the impact of the implemented activities

Appendix

Table 1: Work process analysis of a DITTE instructor trainee of TGD (shift to appendix)

Work process	Tasks involved	Competence required
Admission	• Publishing names of successful applicants. • Issue out of admission letters. • Orientation • Registration of new learners. • Interpretation of school rules and regulations • Introduction of staff and student's leaders to the new entrants. • Tour around the school	• Use of Information and Communication Technology (ICT) skills • Good communication skills • Interpersonal skills. • Records management skills. • Administrative skills. • Secretarial skills • Analytical skills • Carrier guidance skills
Teaching and learning process	**Planning and preparation** • Preparation of schemes of work and lesson plans • Preparation of instructional materials(T/L aids) • Preparation of lesson notes • Actual teaching and learning	• Knowledge of the subject matter • Communication skills • Management skills • Interpersonal skills • ICT skills • Analytical skills
Assessment and evaluation of learners	• Tasks • Formative assessment • Learners feed back • Observations • Projects assignments • Formative/Summative assessment • End of course exams and final projects	• Knowledge of the subject content • Professional ethics • Time management skills • Communication skills • ICT skills

Source: Primary Data from Kaliotte: 2018

Appendix

Table 2: Pairwise matrix ranking

ITEM	1	2	3	4	5	SCORE	RANK
1.Sanitation		2	3	4	1	1	4
2. Instruction material			2	2	2	4	1
3. Instruction process				3	5	3	2
4. Time management					5	1	5
5. Communication feedback						2	3

Table 3: Clustered Data in Long term, Medium term and Short term (shift to appendix)

Long Term(more than 6 months)	Medium Term (3-6 months)	Short Term (less than 3 months)
• Unclear programme content • Failure to conduct study trips	□ Low curriculum coverage in some course units	• delayed feed back • Inadequate practical • Inadequate instructional materials • Poor teaching learning environment • Poor time management • Inadequate practice • Ineffective assessment

Source: Primary data from Kaliotte: 2018

Appendix

8: Implementation Plan

ITEM	ACTIVITY	IMPLEMENTOR(S)	TIMEFRAME
Instructional material	Purchase and collect materials	Instructor and trainers of trainers	Beginning of semester and before every training session
Feedback	Scheme of work, lesson plan, project work, microteach.	Instructor and trainer of trainers	During every training session
Instructional Approach	Microteaching	Instructors and trainer of trainers	Weekly
Report writing	Monitor and assess activities. Compile data collected	Researcher	Weekly up to 30th June 2018

Appendix

9: Observation Checklist

Checklist	Available	Not available	Implementation	Expected competence
Class registers				
Students daily attendance book and teachers' daily attendance record book				
General school time table				
Daily routine work plans				
Individual class time tables				
Remedial lessons' time tables				
Record of work covered				
Teachers' schemes and preps file				
School rules and regulations				

Others;

Time management among stakeholders in the school

Time of arrival to school.....

Time to and out of class.....

Time in library.....

Preparation time.....

Time for meals, breakfast and lunch.....

Teaching and learning practices.....

Students' attitude towards learning.....
Process of implementation of interventions.....

Involvement and willingness of Administration.....

10: Interview guide for lecturers

Has your department developed instructional activities or learning materials to address the teaching and learning approaches in your institute?

Is Kaliotte's capacity to provide better teaching skills affected by inadequacy of any of the following?

Instructional materials (e.g., fabrics, computers, textbooks, journals)

.....

Budget for supplies (e.g., paper, pencils).....

Instructional space (e.g., workshop).....

Special equipment for handicapped students (e.g. Sewing machines)

.....

Drafting software for instruction.....

Calculators for instruction.....

Library materials relevant to instruction.....

Audio-visual resources for instruction.....

Workshop equipment and materials.....

Teachers qualified to teach.....

What are your challenges in developing instructional materials in Kaliotte?

How do you manage to overcome these challenges mentioned above?

How does the capacity to avail instruction materials affect student training skills improvement in Kaliotte? **Thank you.**