ENHANCING TECHNICAL DRAWING SKILLS PRACTICE OF STUDENTS IN UGANDA:

A Case of Anyavu Secondary School-Arua District

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DECLARATION

I, Acidri Khemis Winston, hereby declare that this is my original piece of work and has never been presented to any institution of higher learning for any award.

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APPROVAL

This is to acknowledge that this research titled “Enhancing Technical Drawing Skills Practice of Students in Uganda: A Case of Anyavu Secondary School-Arua District” was undertaken under our supervision and is now ready for examination.

Dr. Muhwezi Lawrence (Principal Supervisor)

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DEDICATION

This research dissertation is dedicated to my family, parents, brothers, and sisters with admiration and gratitude.

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LIST OF ACRONYMS

AR	Action Research
ATL	Active Teaching and Learning
BOG	Board of Governors
BTVET	Business Technical and Vocational Education and Training
CMS	Church Missionary Society
CRT	Cyclical Repetition Technique
CPD	Continuing Professional Development
DVT	Directed Vocational Studies
EPRC	Education Policy Review Commission
FGD	Focus Group Discussion
FW	Future Workshop
GWPE	Government White Paper on Education
GWD	Group Work Discussion
LCP	Learner-Centered Pedagogy
MKO	More Knowledgeable Other
MVP	Master in Vocational Pedagogy
MoES	Ministry of Education and Sports
NCDC	National Curriculum Development Center
PAR	Participatory Action Research
PLA	Participatory Learning Approach
RL	Rote Learning
SS	Secondary School
SA	Situation Analysis

STVEP	Strengthened Technical Vocational-Education Program
SDG	Sustainable Development Goal
TD	Technical Drawing
TVET	Technical Vocational Education and Training
TVS	Technical and Vocational Skills
UCE	Uganda Certificate of Education
UK	United Kingdom
US	United State
ZPD	Zone of Proximal Development

ABSTRACT

The major purpose of this study was to assess and provide strategies for improving the performance of secondary school students in technical drawing and to find out the impediments to effective teaching and learning of the subject in Uganda. The study objectives were; to design a training template to enhance technical drawing skills practice, to implement the training template guidelines, to evaluate the implemented training guidelines. The study adopted the Participatory Action Research (PAR) design which is a qualitative research methodology that strives to improve understanding of a problem, with the intent of contributing to the solution of that problem. The study was conducted in Anyavu secondary school in Anyavu parish Arua district. The data collection process was initiated through directed vocational studies processes to identify the underlying issues of the effective teaching and learning of technical drawing. The stakeholders consisted of thirteen (13) students offering technical drawing, seven (07) teachers of various areas of specialization, and one (01) administrator. The study used value-chain production process to analyze work process in the School. Content analysis was used to logically analyze the data which were gathered from directed vocational studies, documentary analysis, observation, situation analysis, and Future Workshop (FW). Findings revealed that practical time needed for effective teaching and learning was a key issue that contributed to poor performance in technical drawing. Stakeholders recommended that there should be enough time allocated for teaching and practicing technical drawing skills which had been suffocated by limited time provision in the school syllabus and timetable. Technical drawing being practical needs adequate teaching and learning materials, government, partnering agencies and school administrators should provide enough resources in schools offering practical subjects like technical drawing.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The study focuses on the enhancement of teaching technical drawing to improve competence among students in secondary schools in Uganda. With the view of helping the students and teachers explore their potentials to better practice in the subject during training. The introductory chapter of the study presents the background to the study, motivation statements, situational analysis, future workshop, statement of the problem, purpose, and objectives of this study, justification of the study, the significance of the study, the scope of the study, and definition of operational terms.

1.2 Vocational Training and Vocational Pedagogy as a field

The study provided insight on Technical Vocational Education and Training (TVET) as a field, and Technical Drawing (TD) in secondary schools. The information on vocational training and vocational pedagogy as a field is presented in the subsequent sections of this report.

1.2.1 Vocational training as a field

In the context of this study, vocational training was about specified skills understanding and abilities, which attributed to qualified capability of the learners as a focus on the training package. It may also reflect an activity or a set of activities intended to convey theoretical knowledge and professional skills required for certain types of jobs (Mortaki, 2012).Vocational training aims at offering demand-driven skills designed by the physical planners of each county's economy. Vocational training is centered around a precise profession or occupation with a focus on practical applications of acquired skills and is usually unbothered with theory or outdated academic skills. A large part of the instruction in vocational schools is hands-on preparation,

providing a link between education and the world of work. Furthermore, vocational training progresses efficient

and logical capacity that opens up chances for individuals and groups to achieve greater access to labor markets and their incomes. Vocational training is recognized globally, as evidenced by the United Nations (UN) General Assembly held in 2015, where member states, including Uganda as a signatory, reintroduced their obligation to global improvement by implementing the *2030 Agenda for Sustainable Development* (United Nations, 2019). Sustainable Development Goal number 4 identifies the significance of knowledge, skills, attitudes, and values for a sustainable future. SDG 4 emphasizes on the content of education further than reading and implicitly links education to the wider sustainable development agenda. It calls for training students with the knowledge and skills to foster sustainable development as well as teaching for human rights, gender equality, and the elevation of global nationality. Secondary schools should not hamper various means that connects secondary, vocational and institution (Hoeckel, 2007).

The expectation for improved life after school is teared into pieces when one comes out of an institute of higher education only to find out that he or she does not have job market necessities. Those people should be attracted before they become estranged by teaching them basic Employment skills in secondary schools to carve their disappointment in the labor market (Okello, 2011). During my study at the ordinary level students were exposed to various subjects; Technical and practical subjects included Technical Drawing, Wood Work and Metal Work, Agriculture, and Fine art. For Business subjects were Commerce, Principle of Accounts and Office Practice. Students would make optional selections in senior three to give them the privilege to have basic skills in many subject areas. In my personal

experience, such broad exposure and introduction to career subjects should continue as it accelerates students' interest to join Business, Technical, Vocational Education and Training (BTVET), Industrial services, Agricultural institutes, and Farm schools which produce graduates needed for economic growth of our country. This approach also opened up the minds of the students to see the interrelationship between the subjects in the world of work in practice. Concerning entrance to reasonable excellent TVET, it is projected to discourse numerous financial, societal and environmental concerns through furnishing adolescents and grownups by the talents they want for occupation and worldwide nationality and through stimulating reasonable, comprehensive and viable civilizations. In the context of vocational teaching in secondary schools, skills development is pivotal in the improvement of learners' experiences as they practice with technical drawing skills to realize the required level of competence; they put in more efforts to actualize their learning experiences (Mohaffyza et al., 2012).Within the context of Secondary school, skills development in technical drawing provides an opportunity for students to develop their future professional careers and introduction to skill-based occupations.

In Uganda, vocational training plays important role in the improvement of knowledge and skills of citizens at all stages of the learning system. This has been realized through the provision of handcraft skills at the primary levels of instruction, the introduction of Integrated Production Skill (IPS) in Technical Subjects and Fine Art at the secondary levels, revising of curriculum, enforcing supervision in technical institutions, and industrial training at the tertiary levels of learning. These achievements were made possible through enabling laws and policies that support the establishment of skills development for the sustainable development of citizens in

Uganda which was planned in (BTVET Strategic Plan, 2011-2020). The Ministry of Education and Sports, Skilling Uganda, BTVET Strategic Plan 2011- 2020 denoted a paradigm shift for skills improvement in Uganda. The BTVET system was designed to transpire from an educational sub-sector into a comprehensive system of skills advancement for employment, enriched productivity, and growth. The main ambition was to create employable skills and competencies appropriate in the labor market instead of learning certificates. The strategy embraced all Ugandans in need of skills, including primary and secondary school leavers (National Development Plan for 2010/11-2014/15). The Ugandan Government in conjunction with other development partners secured funds to build, equip and upgrade Technical Institutions (UNESCO-UNEVOC, 2014) and secondary schools across the country to promote professional instruction and preparation in the country. Anyavu secondary school was one of the beneficiaries in this funding.

1.2.2 Vocational Pedagogy

Vocational pedagogy is the strategy of education that aims at teaching and training Technical and Vocational Skills (TVS). The transformation of receiving information, industrialized development, excellence of teaching, and the quality of learners have important relation in educational technique and workstation desires, which is needed to instruct our learners so that the learning is hands-on and the learner can interact with learning instruments to gain Technical Drawing skills. Lifelong learning agenda, advocated for Education 2030 contemplates all features of talents for work and life. Vocational pedagogy is knowledge-oriented toward trade, employments, and businesses, it creates interaction with employed people and the training organization. Considering the underlying forces, the interaction is significant for learning in

vocational settings. The perception is comprehensive in addition to didactical accomplishments for example training, learning, and enriched work focused toward practical and occupational disciplines in a secondary school as well as instructor training inside the area of the school structure.

1.3 Technical drawing in Uganda's Education System

Technical Drawing (TD) is a subject in general technical education that is part of the curriculum in secondary schools in Uganda. The curriculum in ideal situation should be assessed, evaluated, and revised every five years. The National Curriculum Development Center (NCDC) started the process of revising the secondary school curriculum in 2012 by piloting the curriculum in some selected schools like St Joseph's college Ombaci in Arua city west Nile, in which Integrated Production Skills IPS was introduced in technical and fine art department the full rollout was scheduled for 2014. In the revised curriculum the number of core subjects were reduced, more emphasis on practical's and integrate computer programs in the learning (Acayo, 2013). The current new lower secondary curriculum is competence based, it emphasized serious rational and problem resolving, creativeness and invention, calculation of mathematical concepts and integration of Information Communication Technology (ICT) for instructional knowledge, Subjects numbers reduced from 43 to 21, teaching and Lessons start at 8.30am, end at 2.50pm, assessment format is criterion referenced.

Technical drawing according to Laguador, (2014) is a way of putting precisely an idea on a paper and must be understood by other people in factories, workshops and on sites. It is a working drawing which is used to produce the real product. The technical drawing is a vital channel of communication in engineering and construction industry (Bashir and Alias, 2017).

Technical drawing, such as conscripting expertise, provides learners the chance to acquire the talents necessary for today's technological production, building, and industrialized businesses (Sanchez et al., 2020) Technical drawing helps engineers to produce designs, prepare bill of quantities, make material estimates, calculate loads and forces on the structures, buildings and engineering items. The hard skills of Technical drawing are not only for teachers and engineers but it reflects good professionalism in the field of engineering and technology.

In Uganda's ordinary secondary curriculum, TD should build the learners capacity for;

- Acquiring basic principles of draughtsman ship;
- Developing basic skills of draughtsman ship;
- Acquiring graphic skills to study engineering in future;
- Developing ability to draw orthographic projection and convert it to isometric projection;
- Using graphics as media of communication;
- Acquiring knowledge as a solution to engineering problems and;
- Reading, interpreting and explaining drawings.

According to Chedi (2015), technical representation is used for interconnecting accepted wisdom, opinions plus projects to others. Broadly, it offers crucial facts around the nature, scope, outward value, physical, acceptance, and the engineering procedure of the project. It introduces students to the profession of drafting as they gain skills and knowledge in freehand sketching, lettering, dimensioning, orthographic and isometric projection drawings. The skills gained through these experiences help students to create engineering drawings through the knowledge gained in the technical drawing classroom. All these form the basis for a student in the field of Sciences, Technologies, Engineering, Arts and Mathematic (S.T.E.A.M) to come up with a model that serves human purpose. STEAM makes disagreement aimed at the basic of invention

academically, concluded in the combination of disciplines and the acceptance of dynamic knowledge and inquiry-based methodologies to make students for "the real world" (Laura & Cooke, 2019). In Uganda, Technical Drawing was introduced by missionaries, in reply to Kabaka Mutesa's 1885 communication welcoming evangelists to his territory in Buganda. In the1886 England's Church Missionary Society (CMS) led a cluster of eight helpers to Mutesa's Buganda territory. The cluster was directed by preachers Shergold Smith and C.T. Wilson. There was no doubt the extending of Christianity and Western evolution in Uganda. Alexander MacKay's description was a gentleman who did only simply give a sermon to extent the gospel in Buganda, relatively one who also trained Ugandans how to recite and inscribe, equipped inborn Ugandans with the talents of carrying out practical jobs by means of present expertise. Learners gained talents on how to construct improved houses, create innovative tools identical hoes, seats, and desks. By the time of independence in (1962), Uganda's school organization remained unclearly distinct till the institution of the 1964 education Act which was articulated by Professor Edgar Castle's 1963 education commission report (Kamya, 2019).From the report, government was to take over all the schools and Prof. Senteza Kajubi Commission in 1987 that created the Education Policy Review Commission (EPRC). In 1992, the EPRC contributed to Government White Paper on Education (GWPE) whose main goal was to eliminate illiteracy and train people with elementary talents and awareness to adventure their surroundings for self-growth as well as countrywide growth for improved nourishment, household lifespan and the ability to continue to learn.

Technical drawing and sciences subjects being promoted by Uganda government are important to our growth as a nation and as a result, the Regime is using these endorsements to incorporate

knowledge with expertise. This help to shape the technological progression, which is desirable in the country. Bale says technical drawing which is working well in secondary is appropriate to our country since it includes the outline of elementary talents (Masinde, 2012).

1.4 Motivation Statement

During my twelve years' experience as a Technical Teacher in secondary school, five years were served as trainer (instructor) in skills training center. Technical drawing provided learners with basic skills in graphics and draftsmanship, knowledge to solve problems in the engineering fields and translate working drawings. Students who utilized their time well improved their skills and knowledge in technical drawing. They were capable of creating design drawings with technical specifications that were easily interpreted and understood by the builders in the villages. Students at the advanced level of education opted for Technical Drawing (TD) as a fourth subject in which they practice their skills to improve their grades and opportunities for admission to the University and other tertiary institutions. At the Ordinary ("O") level, students undertook apprenticeship training to learn technical drawing skills and knowledge in mathematical construction of figures and angles in preparation for the Advanced ("A") level of education.

The five years' experience of instruction in a Non-Governmental Organization (NGO) provided important information on the levels of technical knowledge; trainees were able to sketch, draw and interpret working drawings easily, grabbed instructions faster making them accomplish assignment, practical and projects within the shortest time compared to their counterparts who did not offer TD before. TD though a demanding subject, needs imagination and reasoning, reflection, mathematical aspects, concentration and self-assessment above all it is time-consuming. Reading and mathematics are usually measured of supreme importance to the

elementary skills to be imparted and understood at initial elementary instruction (Walter and Dekker, 2011). During my study time at technical institute, we were provided with personal drawing instruments, lecture rooms and workshops were not locked to allow access to the facilities by learners at their convenient time and had enough practicum time. On the contrary, the timetable in secondary schools provide two periods of eighty (80) minutes per week for teaching and learning TD skills, drawing instruments are inadequate and learning spaces are inaccessible for practices.

Masters in Vocational Pedagogy (MVP) is a skill-based program; students enrolled should have either vocational or technical backgrounds; and those who are practicing their trade. Its facilitation strategy is active teaching and learning which involves learners fully in their learning activities and presentation. The experience I gained from Masters in Vocational Pedagogy (MVP) program in various disciplines has inspired me to examine the learning process of TD in secondary schools in Uganda, with a focus on Anyavu secondary school, Arua district.

1.5 Situation Analysis

According to Perez and Cannella (2016), situational analysis (AS) is a research approach that uses the condition largely considered as a unit of analysis. SA is used to expedite investigation project for the generation of investigation determinations, interrogations, and likely bases for information as well as to scrutinize already gathered information. The process was initiated through directed vocational studies processes to identify the underlying issues of practices involved in the instruction of technical drawing skills of the learners in the secondary schools, and at Anyavu in particular. To appreciate the underlying issues affecting the technical drawing skills practice, the curriculum and timetable for class lessons were analyzed for identifying different experiences. TD is an optional subject in secondary schools; it is taught once a week

double period (80 minutes). According to J. Kura (Personal communication, August 27, 2007), TD should be allocated three periods (120 minutes); 80 minutes for facilitation while 40 minutes for learners to practice the skills. This has affected the time for practicum since the same learning space is used for other lessons as well. Stakeholders used the value-chain production process to analyze the work process in Anyavu Secondary School. The conception of "value chain" was presented by Porter (1985) to designate a complete collection of actions, which are mandatory to carry out a product or service from commencement, through the changed stages of invention, dissemination to customers, (Dubey,et.al 2020). The process analyzes institutional work from enrollment to completion of a course with specific consideration of the quality requirements, materials, equipment, work process, competencies, and systematic work dimensions. During the work process analysis, stakeholders identified several issues related to poor performance in TD subject which were narrowed down and clustered. They include; poor time allocation and management, inadequate instruction materials, indiscipline of learners, negative attitude towards TD and school by the learners, and poor learning environment.

These issues were subjected to a Future Workshop (FW) where the stakeholders comprising of students, teachers, and an administrator identified the short-term issues that can/could be addressed within six months. The technique to convey out participatory research targeted to pass information on societal revolution (Alminde and Warmimg, 2020). It is a strategy for resourcefulness and conversation although upholding measureable objectivity that is attained by applying a qualitative prioritizing scheme that produces arithmetical standards appropriate for existence to be associated and classified. The most critical pressing problems were categorized

and summarized in Table 1.1. The pairwise ranking process indicated inadequate time for learning as the most pressing and critical issue that needed immediate intervention.

In the ranking process;

- Stakeholders compared issue Number one with one which remained neutral and shaded black;
- Came to compare one with two, valued two more important than one;
- Then compared one with three, valued one more than three;
- When compared one with four, valued four more than one;
- One with five valued one more than five;

The process was repeated up to the last number, for the ranking, the most common appearing number is ranked to be the first as seen in the pair wise matrix table.

Table 1. 1 Pair wise Matrix/Ranking

Option	**Option**					**Score**	**Rank**
	1.Good Attitude to education	2.Adequate time	3.Adequate Teaching, learning materials	4.Disciplined learners	5.Favorable learning environment		
1.Good attitude to education		2	1	4	1	2	3
2.Adequate time			2	2	2	4	1
3..Adequate Teaching, learning materials				4	5	0	5
4. Disciplined learners					4	3	2
5.Favorable learning environment						1	4

Figure 1. 1: Stakeholders brainstorming during the situation analysis process

1.5.1 Future Workshop, The preparation phase

In the preparation stage, a meeting was organized in the laboratory, arranged the sitting facilities to accommodate all the participants, ensuring that materials such as writing papers, pens, markers, the flip chart, and cello tapes, were available. An invitation was put on the notice board, clearly indicating the time and duration of the workshop, and prepared refreshments for breakfast, lunch, and evening tea. At the preliminary stage of the workshop, the purpose and principles of FW were explained to the participant, by the lead researcher, and the ground rule to guide the meeting was set together with stakeholders so that they feel easy and positive to participate.

1.5.2 The critique phase

This phase drew the identified description of the theme and the problem FW focused to solve and issues brought from SituationAnalysis to visualized brainstorming, critically and thoroughly discussed and investigated. Stakeholders were grouped into three: students two and teachers one to encourage free deliberation and elimination of inferiority complex, especially among the students, and later converged to the plenary to discuss the ideas. The identified issues were clustered and categorized into short, medium and long term. The short-term issues that can be addressed within six months were regarded as the most critical and pressing problems that needed immediate intervention through research.

Figure 1.2: Stakeholders during Focus group discussion (The critique phase)

1.5.3 The fantasy phase

Here in this phase participants tried to work utopia, drew an assumed and exaggerated the picture of future possibilities, and assumed no financial constraints, plenty of recourses, and no restrictive laws. Innovative techniques were used to do brainstorming, the community fantasies of the participants were established, turning critique points into the opposite which is changing negatives to positives. The critical issues, beliefs, and resolutions were gathered and placed in common pool of thoughts, they include:

i. Adequate time for students to do constructive work in the class, teachers, and administrators are good time managers in executing their roles.

ii. Adequate educational resources are supplied by ministry of education, the school, as well as the parents or guardians.

iii. Disciplined and well behaved learners, who are obedient to authority, attend class regularly, are not suspended, and punished to do manual work.

iv. Good attitude towards education by learners, internal and external motivation, available role models.

v. The favorable learning environment in the school and neighboring communities of free sound pollution and other social lives.

Figure 1. 3: Stakeholders discussing (Fantasy)

1.5.4 The implementation phase

In this phase, the ideas generated by the stakeholders were examined and assessed to determine their achievability, what worked, what didn't work, and why, an action plan was taken.

1.5.5 The follow-up phase

This was the last phase of FW, it was conducted to monitor, evaluate processes and changes that were performed during the action plan, and if needed new FW is planned as action research is spiracle or cyclic as elaborated in Figure 1.4

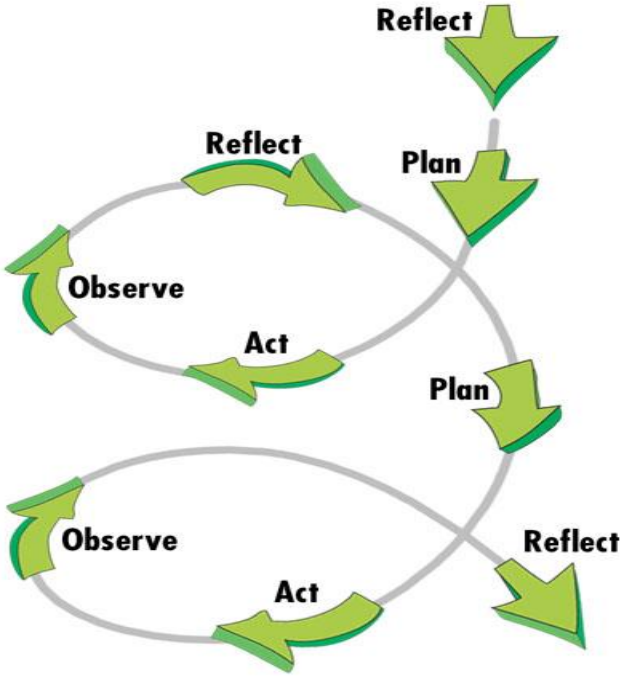


Figure 1.4: Action research cycles

Source: (Herrera, (2018)

Action Research (AR) had remained recognized an inspiring instrument for educators to develop their skills and knowledge for enhancing their learners' attainment through their instructional rehearsal modification. Herrera, (2018) clarifies that the action research is “any systematic inquiry conducted by teacher researchers, principals, school counselors, or other stakeholders in the teaching/learning environment to gather information about how their particular schools operate, how they teach, and how well their students learn”. The Action research is worked by educators with the aim of achieving understanding and increasing in-depth practice in the

positive impact of their learners' products and backup to the enhancement of their own instructive performance.

To conduct a precise study to resolve the schoolroom complications or to current transformation and enhancement in the instructional procedure by subsequent a progression of planning, acting, observing, and reflecting, the stages of research may turn out to be continuous coiled or rotations which may repeat it selves till the action investigator has attained adequate result and feels to stop. By working through the four-stage cyclic procedure, the teachers or researchers study further about both the training and action analysis to employ them and put projected successful modification in the educational practices for actuality. In the four-stage cyclic procedure above identifies the over-all procedure of AR. Pardede, (2019) concisely designated it as follows: AR begins with trainers and students to determine the inquest emphasis, determining the intentional enhancement, and concocting a strategy to detect and keep their classroom environmental practices (Plan). The classroom undertakings are functional (Act) and pertinent remarks are noted (observed) which are then analytically replicated upon separately and collaboratively (Reflect) leading to reviewing classroom events established on the consequences or what has been learnt (Revise Plan). If the proposed enhancement is not yet realized, the reviewed strategy is used to conduct the additional cycle involving the same four steps.

Action research cycles make action research an important and problem-solving tool because of the many different stages it displays, it identifies a problem, devises a plan for it, Acts to implement the plan, observes what is planned, collects, analyzes data, Reflects and share the finding with the stakeholders which are the strategy for improvement. According to Yasmeen

(2008), the Cycle defines that, initial difficult is recognized; this is trailed by a combined statement of numerous promising answer, from which a sole plan of actions that emerge and is fulfilled. Information on the outcomes of the interference are together, examined, and the discoveries are read in light of how effective the achievement has remained.

1.6 Statement of the Problem

Technical Drawing (TD) is a traditional recognized subject in secondary schools in Uganda. In ordinary level curriculum, it enables the learners to; acquire basic principles of draughtsman ship; develop basic skills of draughtsman ship; acquire graphic skills to study engineering in future; develop ability to draw orthographic projection and convert it to isometric projection; using graphics as media of communication; acquire knowledge as a solution to engineering problems; Reading, interpreting and explaining drawings. It is one of the subjects that give learners various opportunities for future professional careers, which is in line with the government's vocationalisation of education program. In 2011, the Government of Uganda launched the ‘Skilling Uganda’ program, a motivated strategy to produce at least one million Ugandans with talents and proficiencies applicable for labor markets in the year 2020. School administrators and teachers do their best to see the government program is successfully implemented and learners get the necessary skills in TD which will assist them in their future academic careers, professional and vocational development. Despite the effort applied for learners' advancement, documentary evidence, survey, and personal experience indicated the subject has been poorly performed, that could be accredited to learning processes where learners don't have enough time to practice TD in secondary school. In view of this scenario, it was also essential to examine the instructional processes of the institutions to improve the situation.

1.7 Purpose of the study

The purpose of the study was to enhance the teaching of technical drawing to improve competence among students in secondary schools in Uganda.

1.8 Objectives of the study

The study was guided by the following specific objectives:

i. To design a training template to enhance technical drawing skills practice for secondary schools in Uganda.
ii. To implement the training template guidelines for technical drawing skills practice in secondary schools in Uganda.
iii. To evaluate the implemented training template guidelines for technical drawing skills practice in secondary schools in Uganda.

1.9 Research questions of the study

i. What type of training manual could be designed to enhance technical drawing skills practice for secondary schools in Uganda?
ii. What could be done to ensure technical drawing skills practice are acquired in secondary schools in Uganda?
iii. In what ways could the implemented training template guidelines for technical drawing skills practice in secondary schools in Uganda be evaluated?

1.10 Justification of the study

This study is critical in improving the level of students' practical skills through establishing the most appropriate form of practice and methodology that will improve students' performance in technical drawing through stakeholders' participation. The low grades of students' performance

in TD ought to improve as a result of critical analysis of the prevailing circumstances that have resulted in poor skills exhibited by current students in Secondary Schools.

1.11 Significance of the Study

Within the teaching profession, action research is the method of cooperative survey directed by participants to appreciate and develop the value of activities on teaching. It is gaining insight, an investigation of actual complications incidents in schools, and the likely development of achievement affecting the constructive variations in the school setting especially learning out comes in educating learner and the livelihood of those in difficulties, this makes action research so beneficial to; policymakers, research users and schools.

- *Benefits of the action research to policymakers,*

The findings of my Action Research will help policymakers create knowledgeable conclusions about guidelines, plans, and ventures by placing the paramount accessible indicators from investigation at the central point of policy improvement and operation. It avails evidence and rational analysis to government, institutions, organizations for the development and evaluation of policies. Curriculum Development Centre uses research for piloting assessments and evaluation of school curriculum and syllabus on the ground and the categories of strategic creativities expected to be more active because a course of action which is centered on research report confirmation is understood to yield better results basing on understanding the policy situation and how to evaluate the probable effects of policy alterations.

- *Benefits of action research to Research users*

Action research avails several aids to research users, mentors devoted to a life-threatening, exploration course used it humanizing school activities, program, and values. The findings of

this study will be used to fill the breach sandwiched between concepts and training, it will assist specialists to improve on their understanding in a straight line with their profession and workplaces. It allows teachers to takings risks and make deviations connected to learning, learner success, and improvement making school environment more attractive to learning communities and a pronounced method of refining teachers' lifelong learning and of Continuous Professional Development (CPD).

- *The benefit of Action Research to schools*

The studies have showed the progressive impression that undertaking action research has on teachers' lessons pedagogics and proficiency development. The tenacity is to ascertain school matters and clarifications and form a part of teachers' professional improvement and skills boost. By undertaking study, educators are supposed to expand their instructional practices for the improvement of learners' knowledge and performance. The importance of research findings has upon the skills improvement of educators and their practices has been extensively recognized, it trains teachers and other teaching experts with the expertise essential for categorizing the problems in schools, and knowledge of addressing the problem thoroughly.

1.12 Scope of the Study

The study scope covers geographical location, the content and the period of the study which is illustrated in the consequent sub-sectors.

1.12.1 Geographical scope

This study was conducted at Anyavu secondary school because it had very low enrollment and poor performance in TD for a couple of years, from 2010 to 2018. It is located in Anyavu Parish, Logiri Sub County, Vurra County, Arua district. The school is located south-west of Arua centre and 46 km from the town along Warr Zombo road.

1.12.2 Content scope

The content range of the research focused on designing a template for technical drawing skills practice for secondary school, implementing the template guidelines for technical drawing skills practice in secondary school, and evaluating the implemented guidelines for improving technical drawing skills practice in secondary school in Uganda.

1.12.3 Time scope

Data collection started from 15th September, 2018 to 20th September, 2020. This write-up was conducted in the month of September 2018 to May 2022; disrupted by the COVID 19 pandemic that lead to a countrywide lockdown.

1.13 Definition of operating terms

The relevant terms below were defined in the context of this study.

Technical skills are talent, skill, or practical competency connected to the arena of the employees, whether engineering or technical skills or 'hard skills frequently connected with the usage of tools, equipment associated to work suitably and professionally, as well as all technical problems.

Practice is the best way of improving the efficiency of production in institutional settings, this leads to practical applications of efficiency in time and motion studies, design layouts of specific work areas and processes, development of specialized tools, equipment, and establishment of production.

Enhancing is making something greater or improving the quality of something or Enhancing is leaving behind improved skillful and focused personalities, more receptive and operative institutes, and improved policy situation for hunting advancement objectives.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the learning theory that best suits the study and the different scholarly views related to the study that explores teaching and learning activities that improve the students' skill practice in technical drawing. The literature provided in this chapter is guided by the objectives of the study.

2.2 Theoretical framework

In the perspective of psychology, the first advocates who contributed a lot to the development of constructivism theory and apply it to classes, students' learning and development were American philosopher and educator John Dewey (1859–1952), Russian psychologist Lev Vygotsky's (1896–1934), and Switzerland Famous Psychologist Jean Piaget (1896–1980). Constructivist teaching and learning theory promotes a participatory methodology in which learners vigorously contribute in their education progression. The core of the constructivist methodology to teaching and learning as expounded by Von Glaserfeld (1995) emphasizes that a student is an active contributor in the learning development and that the educator's work is to expedite knowledge. He also creates a room to connect the theory of constructivism to the practice of instruction (Fernando & Marikar, 2017).

In Constructivism, learning is lively contextualized procedure of creating knowledge rather than getting it. The student conveys past familiarities and traditional aspects to a present. To Adu-Gyamfit, Ampiah, and Agyei (2020), the participatory education methodology involves learners as lively contributors in the complete lifespan sequence of assignment, tasks, and examination. A participatory approach is hands-on, cooperative, contemplative in practice, and decisively in

linking the breach between philosophy and training in a teaching place. Participatory knowledge is not similar to looking for a skilled persons' opinion but it is a developing procedure that brands usage of added instructional methods. Participatory teaching grabs benefit of the learners' current skills and inspires learners to segment their individual skills with other learners. In participatory knowledge, students are dynamic contributors or co-producers rather than submissive customers of products, and so education is a sharing, societal development supportive to individual lifespan requirement and desires. Participatory learning approach (PLA) includes the scheming of complications by learners. The scheming of complications by learners can increase their understanding on the matter and can start to emphasize their thoughtfulness on the valuation of understanding on the topic. The contribution of learners can also help the trainer expand the progression resources. The advancement of the PLA procedure through problematic plan, resolution plan, result assessment, and argumenta adjudication can enable a detailed internalization or concentration of the certain topics by the learners. The understanding of other learners' exertion can simplify a wider appreciation of the agreed themes.

Vygotsky's (1978) theory, one of the bases of constructivism declares three main melodies;

i) Societal interaction shows important part in the course of reasoning growth. Vygotsky argued societal knowledge leads to growth and development all task in the teen's traditional progress looks double, initial on the communal level, among personnels (inner psychological) and after wards on the personal level, inside the kid (intrapsychological) (Gravells and Simpson, 2014).

ii) The More Knowledgeable Other (MKO). It states that to anybody who has improved understanding or advanced capability level than the student, concerning a specific duty,

procedure, or perception. The MKO is actually the educator, mature adult, and the MKO might too be a peer, a younger individual, or material from internet.

iii) The Zone of Proximal Development (ZPD). The ZPD is the space amongst a student's capability to accomplish a job under a Teacher, adults' supervision, peer collaboration, and their capacity to resolve the problematic task self-sufficiently. In the view of Vygotsky, knowledge happens in this region, what the student can do, what the student can do from the help of others, what the student cannot do but can try to attempt it.

In my view as the researcher, learning requires collective effort and free deliberation from learners and teachers; it should also make the learners the central point of importance, for this case constructivist learning theory fits best to the study as it emphasizes Participatory Learning Approach which integrates numerous learning prospects and believed understanding is vigorously created by the student which concurs with Action Research method.

2.3 Design of a template for Technical Drawing skills practice for secondary schools in Uganda

Acquisition of required skills and competencies by learners in teaching and learning processes is influenced by multiple elements which need to be catered for in any formal and informal learning approaches, to achieve expected skills practice and improvement in performance for secondary schools in Uganda, stakeholders' recommended that the designed template could improve and change situations in secondary schools.

2.3.1 Teaching and learning material (Instructional resources)

Many people had published on the significances of Teaching and learning materials for instructions. According to Mwandisi (2016), the insufficiency of references books, and other educational supply resources are the major harms that hasten the poor performance in several secondary school in Uganda. The scenario is because secondary schools rely mainly on donations such as non-governmental organizations and the government, some other schools purchase those learning materials, but because of the cost, few schools have managed to acquire those services and others have failed to acquire them. Failure to acquire reading resources leads to poor performance of many students in secondary schools since, limited library resources make students fail to get basic information resources. The library is like a stock of the school, if it lacks access to information students cannot get a complete quality education (Kalinga, 2010). According to Wambui (2013), instructional resources (IR) are informative material equipment's that facilitate instruction. Appropriateness of teaching and learning resources denotes to acceptable or satisfactory excellence and amounts to substantial properties, bodily amenities, and human capitals.

It is significant to take a suitable workforce strategy for satisfactory teaching resources and physical structures to provide the learning determination. To raise the quality of education, its efficiency and productivity, better learning materials, physical structures and human capitals are needed. Previous study conducted concerning the accessibility of teaching and learning resources in teaching reveal that teaching and learning resource is not constantly obtainable in the institutions. The insufficiency of teaching and learning resource has a severe anxiety to teachers. Atieno (2014), states that, education is a multifaceted movement that includes an interchange of learners' inspiration, structural resources, teaching materials and skills of instruction and syllabus

loads. The obtainability of teaching and learning resource consequently, improves the efficiency in institutes as they are the elementary properties that yield around decent educational presentation in the learners. The essential possessions that should be obtainable for instruction comprised of physical assets, human capitals such as educators and care workers and, physical structures such as workrooms, archives, and teaching spaces. teaching and learning resource gives assistance to increase entrance and instructional results if not improved learners will be fewer in number and expected to be absent in school, its presence deliver motivating, expressive, and pertinent understandings to the learners. These possessions should be providing in excellence and magnitude in institutes for an active instruction progression. A number of trainings have been piloted on the influence of teaching and learning provisions on training. When teaching and learning resource is insufficient instruction is compromised and the inexorable is replicated in truncated educational attainment, great failure tolls, problematic actions, reduced educator's inspiration, and unmet learning objectives. As sighted by the Author cited above and the stakeholders, I concurred with them because as a teacher without teaching material, lesson delivery will be insufficient which ends in half-baked learners.

2.3.2 Missing lessons by students and teachers

Missing lessons are obstacles that activate poor academic performance as a result of low coverage of contents by both students and Teachers.

2.3.2.1 Missing lessons by students

Learner absence has been connected with educational enactment. The study carried out by Céspede et. al., (2018), designates that here is a destructive relationship between learners' educational performance and periods of absenteeism in their progressions.

The revision also specified that learners with deprived enactment described additional nonappearances than those learners with great enactment. Similarly, Bakhsh et. al.,(2020) carried out research by means of the regular missing times and learners' normal school enactment and establish that learners' absenteeism harmed their academic performance. The learners with better appearance than their colleagues achieve improved consistent accomplishment in examinations, and that institutes with greater tolls of everyday audience have a habit of learners performing well on accomplishment of examinations than the institutes with lesser regular presence tolls (Aucejo and Romano, 2016). The enactment of learners turns out to be projecting and real once they appear in the sessions on consistent basis and it has an encouraging influence on the enactment.

The learner who are appearing in lessons on consistent basis, get upper scores and grades in the test than those learners who got preoccupied from lessons. Once the learner is preoccupied from lesson, he or she will fail the chance to acquire new skills. Khalid and Mehmood (2017), had proven that regular class attendance by students make them more successful in their academic achievements than those who are perpetual absentees in the class. To add, regular attendance of class by students give them high chance to retrieve learnt information easily and effective application of the knowledge for lifelong learning (Crede, Roch and Kieszczynka, 2010). In my school experience, something taught in absentia takes a long to be understood and mastered disrupting the normal procedure of following a timetable for reading and study in general.

2.3.2.2 Missing lessons by Teachers

The constant attendance of the educator in the schoolroom is of absolute significance to deliver active teaching to learners. I gathered data concerning educators specially their nonattendance of

classes, and it was proved that educators' presence is essential universally. Hanushe et al, (2016) perceived that over the decade diverse investigates on learners success identified it is the fundamental responsibility of educators. The institution and especially the educators are charged with the community task for teaching of our children. Correspondingly, Miller, Murnane, and Willett, (2007) has acknowledged that educators have supreme significance on the school-based determining factor of learners' educational achievement amongst all the additional elements that intervene on teaching. Investigation to demonstrations that when educator is far away from the schoolroom, learner education is interrupted. Porres (2016), discovers that when educator is frequently preoccupied, learner enactment can be considerably obstructed harmfully. Her revision illustrates that the additional days' educator is out of the schoolroom, the lesser their learners' marks on all examination.

2.3.3 Poor Communication skills

The oral communication channels are valuable medias which inspires obtainment and exchange of information. It stimulates understanding of important information and its transmission to two or more people involved in the discussion (Schmitz, 2012).The appropriate use of communication also simplifies moral associations have numerous significant characteristics that add to the educational brilliance. Dialectal and language problems disturb one's knowledge skills, it also disturbs communal capabilities such as building groups, increasing strong associations, and attaining high self-assurance. This self-assurance might assistance learners in setting additional strength to do fine. Goldfinch and Hughes (2007) propose that the nonexistence of self-assurance talents in communication are interconnected with reduced enactment. This can be transferred into how spoken message talents are appreciated as important providers to educational quality. The incompetence to appropriately converse amongst

colleagues' influence dysfunctions in substituting concepts and sentiments in the learning. Self-assurance in spoken statement permits learners to take in elevation of self-concept which could assist them in community (Yahaya and Ramli, 2009). To wrap up, a communication cycle or spoken communication states that not only verbal verses, but also the engagement of clear and non-verbal components can assist to promote and simplify communication of letters and their senses. Consequently, Teacher should style up their communication methods with students, to lift academic performance in schools, this came to my notice when interacting with students, there are many studies done on the effect of teachers, communication, I cited some few writers, Communication talent is essential to the teacher for the conveyance of instruction to the students, it include listening, speaking, reading and writing. To be effective in teaching, the teacher should employ all those necessary skills in the delivery of content. Good communication of a teacher always makes his expressions easily understandable.

To interact with students, manage class room, disseminate instructions, effective communication skills of a teacher are paramount. Upright transmitting abilities of an instructor are the simple requirement of instructors' achievement of learners, and proficient achievement of lifespan. The educator converses other guidelines verbally in the schoolroom to learners. Educators with humble message abilities may root the disappointment of learners to study and support their education. Learners want to appreciate what is correct, and what is incorrect while it relies on the transmision abilities of educators which he implements in the schoolroom (Khan and Manzoor, 2017). For knowledge the student need to be observant to their educator throughout the talk. If educators accept an encouraging proficient assertiveness towards the learners in their educational and communal successes, the learners can certainly stimulate their educational flat. Educator has

the obligation to demonstrate and essentially organize learners for the drive that they can handle all categories of circumstances. Communication is the procedure which one accepts while partaking his / her understandings with others. For educator, it is essential to have upright transmitting message abilities for the respectable knowledge of the learners. Educators must have upright communication abilities for enabling the learners and attaining noble specialized aims. The efficiency of instruction is not reliable when details of the technique adopted by the educator while coaching the learners is wrong.

2.3.4 Poor relationship between students and teachers

The associations among educators and learners disturb schoolroom surroundings, instruction, as well as guideline, and schoolroom restraints. If educators brand their schoolroom a "decent room for learners, which means they will need to be here, and will normally be together on the task and well-acted (Churchill et al, 2018). Adding to that, learners maintain their relations with the educators and they answer back with bigger commitment and strength, once they reason that their educators' upkeep them and educators are helpful. The means that educators deliver these potentials are done in the collaboration and commitment with their learners in the schoolroom. The trainer-learner relationship is one of the dominant gears within the educational situation. The main reason distressing learners' improvement, institutional arrangement, and educational enthusiasm, is trainer-learner association which formulates the foundation of the communal setting in which education is received (Hughes, 2011). Educator's schoolroom observation and their communications with their learners are understood to have the highest result on the learner education outputs (Noble, McCandliss, and Farah, 2007).

2.3.5 Individual differences

In my view, causes of individual differences vary from person to person and school to school, these are issues like the lesson atmosphere, femininity dissimilarity, instruction stylishness, domestic contextual, commercial contextual and demographical influences that means teachers should design their instructional contents to fit all of the learners. Similarly, (Somyurek, Guyer, and Atasoy, 2008) state that instructional designers should focus on designing instructional environments according to users' needs. The direction from the custodians and the teachers incidentally influences the learners' enactment (Hussain and Haider, 2009). Revision of Behavior al Variance change between Undistinguishable Identical twin and Sibling Identical twin in Pakistan Giuliodori, Lujan, and DiCarlo, (2006), established that through noble communication, learners might improve their skills in resolving qualitative questions. Group learning can similarly inspire learner contribution (Varaprasad and Manikanta, 2018).

2.3.6 Feedback

In this review, feedback is intellectualized as evidence availed by a person (like a trainer, a learner reference resources, elders, and guardian) concerning features of one's enactment or understanding. Educator or parental guidance can be provided to curative facts and reassurance, a group can deliver another approach, a manuscript can deliver material to explain concepts, and a student can search up the answer to assess the perfection of a reply. Feedback consequently is a "consequence" of enactment (Hattie andTimperley, 2007). Aglah and Akpatsu (2014), advise that to rise the potential benefit of determinative valuation, learners would be encouraged to make operative use of the acknowledged response. The type of feedbacks, the time of giving, and criteria a student gets the feedbacks are very important than the number of the feedback given. The methods and means in which persons understand responded material is the key to increasing

constructive and appreciated impressions of self-efficacy about education, which in turn heads to promote knowledge.

2.3.7 Indiscipline

Nonexistence of discipline amongst students was quoted by stakeholders as a projecting issue that triggered the perpetuation of unproductive teaching and learning leading to the deprived educational enactment of students in the school. Learners have converted to be uncontainable and extremely bad-mannered to: themselves, educators, school managers, close relative and to the public at large. They represent diverse categories of indiscipline characters among which comprise the following actions: refusing of lessons, viewing and involving in pornography, deceiving fierceness, untruthfulness, noncompliant to teachers, monitors, and school management, rapping girls, alcohol drinking, challenging and wounding teachers, destruction, unpunctuality to school, misuse of drugs, offensive languages, theft, rebelling; among others. Indiscipline at school critically disturbs the excellence of teaching and learning, exposed/uncompleted school curriculum (Ngwokabuenui, 2015). Consequently deprived grades, failures, and expenditure on resources financed by shareholders of education such as fathers, and the republic government. This literature analysis was piloted grounded on the stakeholders' observations of the consequence of indiscipline on the educational enactment of students in secondary schools in Uganda. Results discovered that most institutions were overwhelmed with discipline complications.

Nonexistence of discipline among students was mentioned as a protuberant element that instigated the prolongation of ineffective teaching and learning which is prominent to poor educational performance of students in schools. Corporal fierceness, threat, stealing, drawings

and destruction, uttered abuse, lack of contemplation, disruptiveness, and disregard for power are some of the exhibitions of troublesome conduct that teachers have to compact currently (Simelane, 2017). This has caused students transporting armaments to school, connecting with bunch of criminals for defense, nonattendance, and falling out of school. Schools that have a character of disobedience and insurgence among their students produce deprived educational results, prompting some teachers to leave the place because they are exhausted of handing discipline complications. Consequently, one main obligation of the community school organization is to offer a nonviolent and favorable school environment in which instructors and trainees can magnificently instruct and learn consequently, progress the academic enactment of trainees.

2.3.8 Rote Learning

There are numerous meanings of rote learning that has been distinct by several specialists. According to Belouahem (2020), rote learning is agreed as mechanical use of the remembrance Without essentially considering what is memorized, and learnt by rote method, it means learning Is shallow at the surface. Moreover, rote learning is also distinct as ‘cyclical replication technique’ that emphasizes how the memory works (Wu, 2014). I, the lead researcher, agreed with scholar Belouahem, in rote learning, learners do not recall and retrieve learned items easily because they have limited time frame for rehearsing.

Summary

Constructivist teaching and learning theory promotes a participatory methodology in which learners vigorously contribute in their education progression. The theory argued that social interaction in society or community is important source of knowledge in which learners learning

development takes place. It emphasized learners learn from teachers, adults, peers and other teaching, learning materials like internet, books and journals. It further added student has ability to undertake a task independently, under teachers' supervision and with help of others. The theory therefore uploaded availability of reference materials for teaching, learning and resourceful persons and audience for consultations.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter focused on the procedures undertaken to gather information for the improvement of practical skills training in Technical Drawing. It covered the aspects of the research design, population and sampling techniques, methods of data collection, the procedure of data collection, ethical consideration and data analysis. Research methodology indicates the logic of development of the process used to generate theory that is a procedural framework within which the research is conducted (Haradhan, 2017). It provides the principles for organizing, planning, designing, and conducting research.

3.2 Research design

This study, employed Participatory Action Research (PAR) which is considered a subset of action research. It is the systematic collection and analysis of data for the purpose of taking action and making change by generating practical knowledge. As well, it is a qualitative research methodology option that requires further understanding and consideration. It is generally grounded in scientific method of collecting data and is highly pragmatic. PAR is considered democratic, equitable, liberating, and life-enhancing qualitative inquiry that remains distinct from other methodologies (MacDonald, 2012). It involves people who are concerned about or affected by an issue taking a leading role in producing and using knowledge about it.

PAR approach established relationships and common agenda with stakeholders, collaboratively decided on issues on research design, ethics, pieces of knowledge, and accountability which could assist to improve performance in TD at Anyavu secondary school. Qualitative research integrates the methods and techniques of observing, documenting, analyzing, and interpreting

characteristics, patterns, attributes, and meanings of human phenomena under study (Gillis & Jackson, 2002).

3.3 Population

Chaudhury and Banerjee (2010) defined a population as an entire group about which some information is required to be ascertained. Participants in the population must share at least a single attribute of interest (Asiamah, Mensah and Oteng-Abayie, 2017). It is this attribute that makes participants eligible as population members. The population was constituted of (1) Administrator, (4) senior three, (9) senior four students offering TD, and seven (7) Teachers which totaled up to 21.

3.4 Sampling and Sample size

Mujere (2016), defined sampling as the act, process or technique of selecting a suitable sample, or a representative part of a population to determine parameters or characteristics of the whole population and Sample size. To have the best representation of the population in the study, purposive sampling technique was used to select one administrator, four (4) senior three and nine (9) senior four students offering TD, and random sampling to select seven (7) teachers of various subject areas.

3.5 Sampling techniques

The sampling technique is the selection of a subset from chosen sampling frame or entire population (Taherdoost, 2016). It is used to make inferences about a population or to make generalizations with existing theory.

3.5.1 Purposive sampling

Purposive sampling is also known as judgmental, selective, or subjective sampling. It reflects a group of sampling techniques that rely on the judgment of the researcher when it comes to selecting the units (e.g., people, cases/organizations, events, pieces of data) that are to be studied (Etikan and Bala, 2017). Purposive sampling was preferred because, it is typically used in qualitative research to identify and select the information-rich cases for the most proper utilization of available resources (Etikan, Musa and Alkassim, 2016). This involves identification and selection of individuals or groups of individuals that are proficient and well-informed with a phenomenon of interest on teaching and learning so I needed a sample that best contribute and answer the research questions concerning TD Skills acquisitions in Anyavu Secondary School.

3.5.2 Simple random sampling

Simple random sampling is obtained by choosing elementary units in search a way that each unit in the population has an equal chance of being selected. A simple random sample is free from sampling bias (Fridah, 2002).With the simple random sample, there is an equal chance (probability) of selecting each unit from the population being studied when creating the sample. My aim of using a simple random sample was to reduce the potential for human bias in the selection of teachers to be included in the sample. As a result, the simple random sample provided me with a sample that is highly representative of the population I studied, giving me enough data on the problem of teaching and learning of TD in secondary schools.

3.6 Sampling procedure

The sampling procedure is choosing part of a population to use to test propositions about the entire population or used to choose the number of participants, interviews, or work samples to use in the assessment process. In this study, the population used is illustrated in Table 3.1.

Table 3. 1 : Sample and sampling technique

Category	Total population	Sample	Sampling technique
Administrator	3	1	Purposive
Teachers	24	7	Simple random sampling
Students			
Senior four	97	9	Purposive
Senior three	82	4	Purposive
Total	**206**	**21**	

3.7 Methods of data collection

In data collection, stakeholders employed workable options which were proved convenient for the study. The methods included;

3.7.1 Documentary analysis

Document analysis is a form of qualitative research method in which documents are interpreted by a researcher to give voice and meaning on an assessment topic (Bowen, 2009). Bowen recommends first skimming the documents to get an overview, then reading to identify relevant categories of analysis for the overall set of documents and finally interpreting the body of documents. Document analysis is a systematic procedure for reviewing or evaluating documents, which can be used to provide context, generate questions, supplement other types of research

data, track change over time and corroborate other sources (Dalglish et al., 2020). It is the process of systematically logical techniques to describe and illustrate, condense and recap, and evaluate data. According to Shamoo and Resnik (2007), various analytic procedures provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data. For these reasons I decided to use it for data collection. Price et.al. (2021), also said there has been an increase in the use of organizational and institutional documents as a data source in qualitative research. Documents were collected from a variety of sources, including public records, personal documents and physical evidence I adopted the mentioned method to collect the data; public records, I collected data by checking head teachers report to board of governors (BOG), policy manuals, and TD syllabi. Personal documents, I used personal action experiences, information books, incident reports, lastly I assessed the physical objects found within the study settings; talking compounds, posters, drawing instruments, and instructional materials, infrastructures to collect detailed data on the performance of students in secondary school.

3.7.2 Observation

It is defined as the systematic description of events, behaviors, and artefacts in the social setting chosen for study (Kawulich, 2015). It is a tool used regularly to collect data by the teacher, researchers in their classrooms, social workers in community settings, and psychologists recording human behaviors. Observation method was roped in by the researcher to develop an overall understanding of the phenomena being investigated, most objectively and accurately possible. I employed Gold (2015) observation preference of overt observation stances number three, which states that the observer as a participant participates in the social setting under study. During the data collection process, I used observation checklist to observe lesson sessions,

instructional resources and physical facilities in the school. Group members were aware of the purpose of the research method to ascertain the causes of poor performance and low enrollment in TD in secondary school which needed action by research.

3.7.3 Focus Group Discussion (FGD)

The Focus group discussions have become a popular research method across various academic and applied research areas and provided researchers the opportunity to observe how people interactively construct, express, defend, and modify their opinions within a group discussion (Wu et al., 2021). It is also a general research methodology that researchers use to collect data from students, teachers, farmers, or other consumers.

A focus group refers to a group of people who have been purposefully assembled at a place to take part in a discussion on a topic of relevance. It is a method of collecting information by studying people`s collective views, opinions, experiences, and reactions. The study utilized this method to discuss the theme of the study in the FW process which led to the identification of critical pressing issue that needed intervention by research. FGD was used during FW at critique phase where visualized brainstorming, critical thinking and thoroughly discussed problems that contributed to the poor performance in TD in secondary schools. Stakeholders were grouped into three: two focus groups with population of six and seven students who offered TD. Teachers one group with population of eight to encourage free deliberation and elimination of inferiority complex, especially among the students, and later converged to the plenary to discuss as one team. Focus group discussion were conducted twice for thirty minute latter converged to plenary. The meeting was held in new laboratory block with minute secretary who captured what transpired in the meeting.

3.8 Action Research Tools

The research tools used in the study to identify the pressing problem were: work process analysis guide, future workshop guide, focus group discussion guide, documentary checklist.

3.8.1 Work process analysis guide

This was one of the initial tools used to collect data for this study, this was selected for its systematic system of analyzing institutional work process and its elements from the enrollment stage of learners up to the completion of a level with its marvelous guide called value-chain production process to analysis work process in the institution.

The value-chain production process has elements of quality requirements, materials, equipment, work process, and competencies. Using the guide, stakeholders analyzed the elements and found out that some teachers only send and dictate lesson notes to learners which affected TD skills practices. The materials and equipment were not enough which affected service delivery. Regarding quality requirement and competences, it was found that learners were capable of passing with good grades and bear quality needed in society. All teachers were trained and competent to teach in secondary schools.

3.8.2 The Future Workshop (FW) guide

As discussed earlier, this is a tool used in participatory action research. The Future workshop is an approach that stresses critiquing, levelling grounds to learn, teamwork, democratic, empowerment of stakeholders. That is why FW is suitable process used to relief voice less group of people suffering in the community to raise their concerns and strive for a better life. The FW was effectively used for data collection because it has ground rules which govern the process and five phases of Jungk, and Müller, (1987) as cited by Victor, (2014) which consisted of:

The preparation phase: this is introduction stage, the facilitator set a room, organized the local facilities, composed theme, issued invitation notice to participants, time, and the ground rules for the workshop were settled.

The critique phase: in this phase, problems were critically, thoroughly, objectively, discussed and investigated. Brainstorming, creative reasoning techniques, constructing, and forming of ideas in the core sub-sectors were resolved by stakeholders.

The fantasy phase: here participants worked utopia, drew an imaginary image of the future. Thinking and innovative techniques were employed. They developed the social fantasies by changing negatives to positives assuming everything was satisfactory.

The implementation phase: here the stakeholders' ideas, strategies found during the study process were tested and assessed whether their workability was obtained for reflection, and an action to be taken.

The follow-up phase: this was the last phase of the guide to monitor the implemented activities and evaluate the whole process performed in the study and if needed new FW will be planned.

3.8.3 Focus group discussion guide

In order to guide the focus group discussion and keep the participant in their free roll and mood for comprehensive deliberation, the lead researcher used generated discussion guide to drive the groups towards the topic of concern in the discussion. This acted as a bench mark to guide the lead researcher to keep the discussion in line with the planned topic and important items selected for discussion of poor performance and low enrollment in TD in secondary school.

3.9 The procedure of data collection

An introductory letter (see Appendix D) was issued by the MVP Program coordinator to introduce me leading researcher to Anyavu Secondary School where the study was conducted, after explaining the type of the research MVP Program is training in, the administrators of the school welcomed the idea warmly. The researcher stated the data collection process to the stakeholders, they conducted situational analysis, FW which was incorporated with Group Work Discussion (GWD) to generate comprehensive data for investigating the problem of poor performance in technical drawing and low enrollment in the school by action research. Action Research is a good tool school administrator can use to address the educational encounters they experience in their schools today. Johnson (2011), considers it that engagement of leaders in Action Research empower them and lift their experience in the managements. He said research is the best determinant of professional practices that utilizes the findings to improve situation.

3.10 Ethical consideration

The study was subjected to certain ethical issues. Ethical considerations were observed by applying anonymity for keeping secret by not identifying the background of stakeholders, refrain from referring to them by their names, or divulging any other sensitive information about a participant (Akaranga and Makau, 2016). During the research, I vowed to protect the information given in by the respondent confidential. This enhanced honesty towards the research project by protecting stakeholders from physical and psychological harm. Voluntary and informed consent was one of the major ethical issues I applied in conducting this research which implied the fact that a person knowingly, voluntarily, intelligently, clearly and manifestly, gives his or her consent. In selection of stakeholders, I involved most of the categories in the institutional settings including disadvantaged and vulnerable group such as school children, storekeepers, in most

cases marginalized to participate in school management issues. I explained the purpose of the study and the benefits that accrued from it to the stakeholders before they participated in the activities of the research. I told the benefit of action research to the stakeholder which encouraged them to be sincere, deliberate freely during meetings, workshops, and data collections. In the study, I avoided fabrication which involves creating, inventing data or results which are then reported so that the research does not seem to have been well represented (Kour, 2014). I didn't do plagiarism in work, it involves stealing someone else's work and lying about it afterward (Helgesson & Eriksson, 2014). Others prefer to speak of "copying" part of someone else's published work and using it without showing that it is borrowed from someone else. In this study I ensured that the work is original and be devoid of some texts, results, expressions which are borrowed, manipulated, words of the author, and publication without acknowledging where the information has been obtained from.

3.11 Data analysis

Content analysis were used to logically analyze the data that were obtained from directed vocational studies, situation analysis, future workshop, documentary analysis, observation, field notes, meetings, and focus group discussion. A content analysis can be defined as a detailed examination of human conversation, or "the systematic, objective, quantitative analysis of message characteristics" (Reichenbach, 2014) . According to Langkos (2014), this is the type of research whereby data gathered is categorized in themes and sub-themes, to be comparable. The main advantage of content analysis is that it helps in data collected being reduced and simplified, it gives the ability to the lead researcher to structure the qualitative data collected in a way that satisfies the accomplishment of research objectives built for the study to improve teaching and learning of technical drawing skills practice for secondary school in Uganda.

CHAPTER FOUR: ACTION IMPLEMENTATION AND EVALUATION

4.1 Introduction

This chapter presents the designed problem strategies, solutions and indicators undertaken by the stakeholders in the action implementation and evaluation meeting on enhancing technical drawing skills practice of students in secondary schools. During the meeting, stakeholders pointed out some issues which could be causes that hinder students' skill developments progress and suggested possible solutions, indicators used rectify the problems in the schools. The lead researcher designed a template to illustrate the views of the stakeholders as shown in Table 4.1

Table 4. 1: Implementation Strategy Template

S/N	Issues/Problem	Possible solution to the problem	Responsible Persons	Time Frame	Indicators/Monitoring Tool
01	Inadequate teaching and learning material	Need to acquire more teaching and learning materials	Administrators Teachers, Students	16th sep,2019 to 11th oct,2019	list of materials availed/not availed
02	Missing lessons by students and teachers	Attendance list for students, supervision sheet, for teachers	Class teachers, prefects, Administrators	16th sep,2019 to 11th oct,2019	Students' daily rollcall sheet, Teacher's lesson Attendance monitoring Tool
03	Poor communication skills	Demonstration, Presentation of content by students, Teacher	Students, Teachers Administrators	16th Sep,2019 to 11th Oct,2019	Participation in Class presentation, Demonstration, list of presenters
04	Poor relation between students and teachers	Counselling and guidance	Administrators, Students Peer, Teachers	Immediately 06th August,2019	Monitoring Students and parent-family tool
05	Individual differences	Formation of discussion groups	Students, Teachers, Administrators	Immediately 06th August,2019	List of Discussion groups
06	Delayed Feed back	Prompt Marking, correction	Teachers, Students, Administrators	Immediately 06th August,2019	Record of marks, Scores, scripts
07	Indiscipline	Counseling and disciplinary action	Teachers, Administrators, Students	Immediately 06th August,2019	Records of daily security, remind to lock cases, dorms, gates, refunds
08	Rote Learning	Active Teaching and learning	Teachers and Students	Immediately 09th Nov, 2021	Physical models

4.2 Inadequate teaching and learning material

The teaching without instructional materials may certainly result in poor academic achievement. One of the issues stakeholders identified as set back in the students' skills practice and knowledge acquisition in TD was inadequate teaching and learning material which was as a result of many cases, some were due to tear and wear as shown in Figure 4.1 while others are not purchased at all, that was ignited by a number of challenges.

Figure 4. 1: Damaged Drawing instruments

This study was carried out in Government Aided Universal Secondary Education (USE) School. Universal Secondary Education (USE) was introduced by the Government of Uganda in 2007 in a bid to absorb the overwhelming number of pupils from primary under Universal Primary Education (UPE) and other private schools, USE schools depend mostly on the Government Grant for their functionality. In documentary analysis, it was found in 2007 government's remittance of fund was in two categories: Threshold Grant and Variables which summed up to good amount for running a school, later threshold was cancelled leaving the variables only which is 41000 Ush per head which is not enough to run the school and purchase all needed items at once.

- *Area of priorities*

There are some areas in the school which demand a lot of money and attention which include; food, construction of staff houses and administration. Food is very crucial item in school, its supply should be constant to avoid commotion in the school. Government is emphasizing teaching staff to leave within school premises for easy consultations by the students. Running a school needs money, there should be stand by money for travels, office equipment, public relations, and emergences.

- *Low school fees structure and payments*

The school had low fees structure of 159,800 and 229,300 Ush for day and boarding students respectively which is making it impossible to cater for all requisitions at once. To solve this problem of Inadequate teaching and learning materials, From focus group discussion and meetings, stakeholders informed head teacher about inadequacy of instructional materials and its negative impact on students' performance. After the meeting head teacher informed teachers to plan and submit requisition early at the beginning of the term and items be bought in phases. These include: Chalk, drawing instruments, stationeries, avail rooms and furniture for lessons. Teachers accepted to improvise some resources, and buy writing, and drawing pens, pencils. Students agreed to bring some drawing equipment like drawing books, pencils. The figure **4.2** shows assorted newly bought text books and drawing instruments, it boosted lesson planning for teachers and students advanced reading. This rectified the problem of inadequate teaching and learning materials and improved performance in the school.

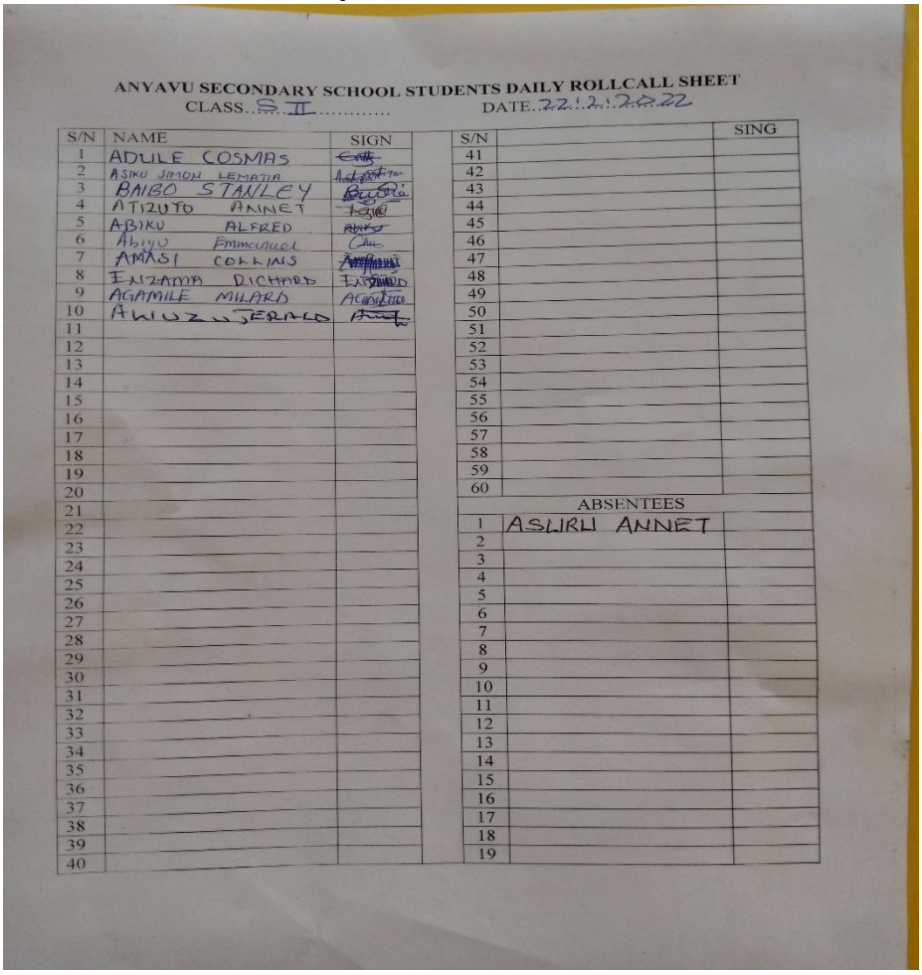
Figure 4. 2: Text books and Drawing Instruments

Source: (Departmental shelves)

4.3 Missing lessons by students and teachers/Absenteeism

Dodging of lessons by students and missing lessons by the teachers was so rampant in Anyavu Secondary School which measured to syllabi not completed and low coverage which had negative impart at students' acquisition of TD skills practice and performance. In stakeholders implementation meeting, the solution to missing of lessons by students and teachers was reduced by designing student roll call sheet to mark students' during class session by the teacher and teachers lesson attendance monitoring tool for supervising teachers by class prefect as seen in Table 4.1 and 4.2 respectively.

Table 4. 2: Students Daily Roll Call Sheet



ANYAVU SECONDARY SCHOOL STUDENTS DAILY ROLLCALL SHEET

CLASS..S.II..... DATE..22.12.2022

S/N	NAME	SIGN
1	ADULE COSMAS	
2	ASIKU JIMON LEMAJIA	
3	BAIBO STANLEY	
4	ATIZUTO ANNET	
5	ABIKU ALFRED	
6	Abiyu Emmanuel	
7	AMASI COLLINS	
8	ENZAMA RICHARD	
9	AGAMILE MILARD	
10	AWUZU JERALD	
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ABSENTEES

1	ASUKU ANNET
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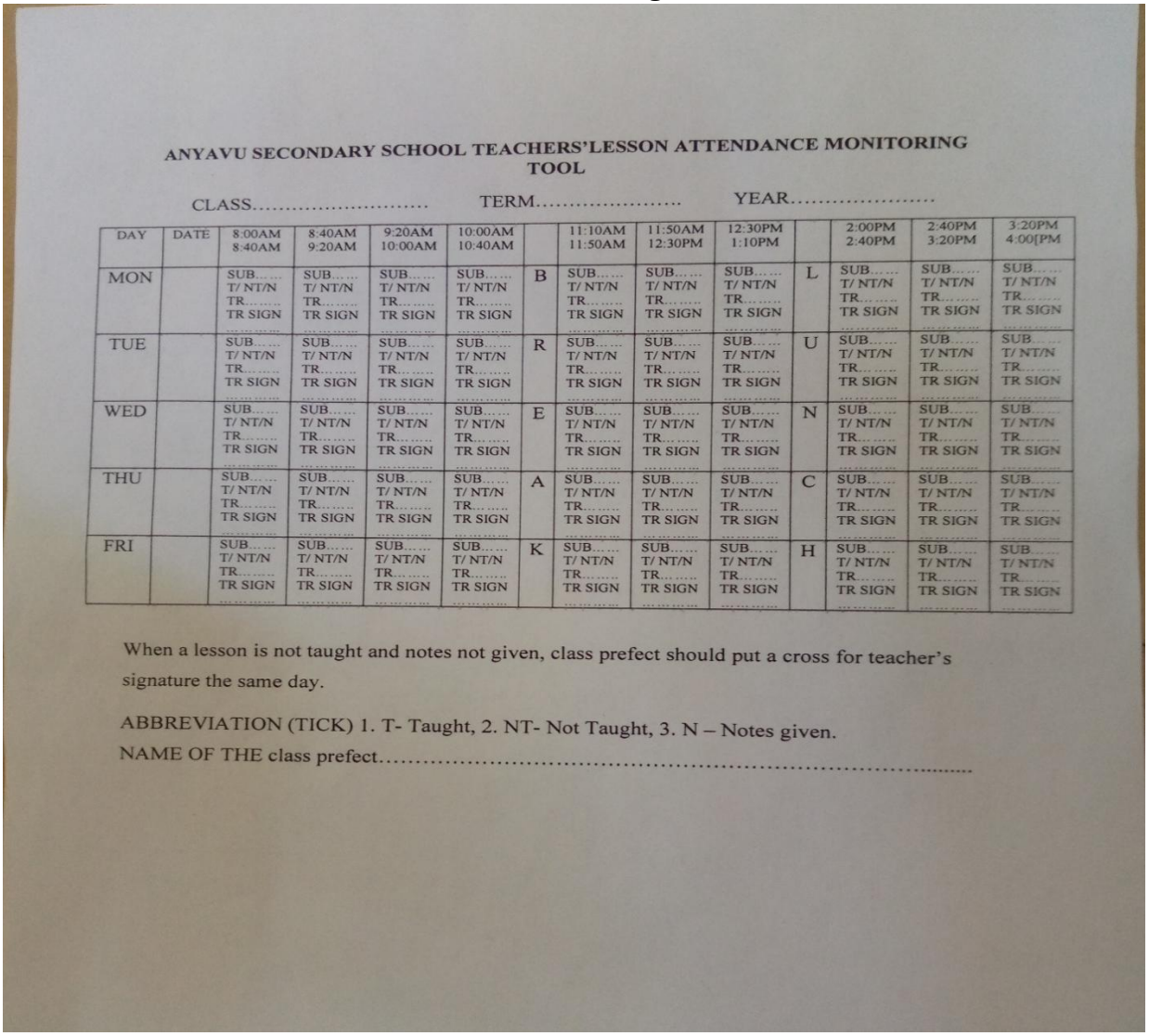
Table 4. 3: Teachers' Lesson Attendance Monitoring Tool



ANYAVU SECONDARY SCHOOL TEACHERS'LESSON ATTENDANCE MONITORING TOOL

CLASS..... TERM..... YEAR.....

DAY	DATE	8:00AM 8:40AM	8:40AM 9:20AM	9:20AM 10:00AM	10:00AM 10:40AM		11:10AM 11:50AM	11:50AM 12:30PM	12:30PM 1:10PM		2:00PM 2:40PM	2:40PM 3:20PM	3:20PM 4:00[PM
MON		SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	B	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	L	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN .....
TUE		SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	R	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	U	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN .....
WED		SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	E	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	N	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN .....
THU		SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	A	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	C	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN	SUB..... T/ NT/N TR..... TR SIGN .....
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When a lesson is not taught and notes not given, class prefect should put a cross for teacher's signature the same day.

ABBREVIATION (TICK) 1. T- Taught, 2. NT- Not Taught, 3. N – Notes given.

NAME OF THE class prefect.....

4.4 Poor Communication skills

Poor communication cuts across during lesson dissemination, though the side of Teachers in this chapter had been under weighed by the stakeholders, I elaborated my view in Chapter two of literature review.

4.4.1 Students Poor Communication Skills

Communication is valuable in obtaining and exchanging information. This is one of the challenges learners are facing especially those who joined from rural UPE/USE Schools, learners coming from rural schools cannot express themselves and talk in English which results in poor interpretation of examination questions, reflections and discussion. Through observation, using triangulation technique solutions to minimize the challenge was the teacher should plan lessons that involves learners to participate actively by using teaching and learning methods and techniques that focus on principles and practices of learner centered pedagogy as a teaching approach to achieve quality education. Prepared list of presenters and demonstrators made every body to present and improved communication skills hence improved in the school. Demonstration technique of teaching is the most vivid and efficient teaching technique that is used in basic technology subjects (Elom and Okolie, 2014).

It is possible for students to learn how to perform by reading or being told how to do something. The students learn faster and more effectively when they are shown something in the classroom because, the experience will stick in their memory. Demonstration is the presentation of planned action designed to illustrate a useful phenomenon often used to teach fundamental operations in basic technology. With demonstration technique, the teacher can explain the steps of an operation of a practical while performing them and where practical work is often carried out for skills acquisition. Another teaching technique considered to help learners improve their communication skill is Presentation, Oral presentations have been shown to be extremely successful with respect to improving learners' skills, and increasing their autonomy. For example, Brooks and Wilson (2014), found that using oral presentations in classroom lead to greater class interaction and participation, an increased interest in learning, and noticeable

improvements in their students' communication and presentation skills. Al-Nouh, Abdul-Kareem and Taqi,(2015) adds that we can look at oral presentation as a way of imparting of the material studied from which students seek to make their own meanings from the ideas of others indeed, true students follow their colleagues attentively while presenting as shown in Figure 4.3.

Figure 4.3: A student at presentation

Exposure visits technique unite students with outside world, the stakeholders agreed that students' visit to the construction industries exposes them to life skills-based learning of basic technology.

The stakeholders also revealed that discussion technique of teaching gives students' higher opportunities to ask questions in the classroom. The teacher acts as a conference leader who moderates the students' discussions. The teacher provides the topic and start the discussion;

he/she will ask the students questions to enable the students fully participate in the topic of discussion after which he/she will summarize the opinion of the students.

Figure 4. 4: Students discussion group

The techniques of engaging the learners in active discussions, demonstration and presentations develop learner's knowledge of sharing competences, communication skills and confidence will improve learner's communication skills.

4.5 Poor relation between students and teachers

Some students fear to consult teacher for various reasons, from focus group discussion, participants discovered some teachers do not respond to students questions in the class making students to dodge their lessons. Majority of students who dodge lessons were associated with indiscipline cases were trying to avoid teachers. Good and effective communication helps teacher to develop good relation with students (Asrar and Hira, 2018). Thus, there is more positive relation between teachers and students (Forkosh-Baruch, Hershkovitz, and Ang, 2015).

Unavailability of teachers and poor communication by teachers are the major factors that have led students to abandon their study at a certain level (Dinu, 2015). A large number of students agreed and thought that the friendly environment and cooperation of the teacher is an essential part of the success in their studies (Aldridge, 2014). To incorporate scholars' views, stakeholders suggested counselling as the solution to the problem which is in line with teachers' responsibility for helping students to decide upon a course of action, to understand, change patterns of behavior which distresses, disturb and affect their social behaviors. The aim is to provide an opportunity to work towards living more satisfyingly and resourcefully. Counselling relationships is concerned with developmental issues, addressing and resolving specific problems, making decisions, coping with crisis, developing personal insights and knowledge, working through feelings of inner conflict and improving relationships with others.

Table 4.4 shows teacher-parent family tool for counselling and help students interact freely with the teachers, some sensitive counselling reports are confidential. The teacher can counsel students in a group or single at any time. The tool improved relationship between teachers and students. Students started attending classes and consulting teachers regularly, which improved academic performance in the school.

Table 4. 4: Teacher-Parent Family

ANYAVU SECONDARY SCHOOL

LIST OF TEACHER–PARENT FAMILY.

Mr. WANJALA FELIX

S/No	Name	Class
1.	ADAKURU JEMILLY	S.3
2.	OKPOA MOSES	S.3
3.	BAYO JACKSON	S.3
4.	ALUMA BEN	S.2
5.	TABU JOEL	S.2
6.	EJORU OLIVER	S.2
7.	AVUA COMAS	S.4
8.	DALILA JOAN	S.4
9.	AMVIKO SCOLA	S.6
10.	BIKU EMMA	S.1
11.	EYOTARU SYLVIA	S.1
12.	DONIA CHRISTINE	S.1
13.	OKULEZU JEMILLY	S.6
14.	DRATERU GRACE	S.1
15.	AYIKOBUA PHILLIAM	S.1

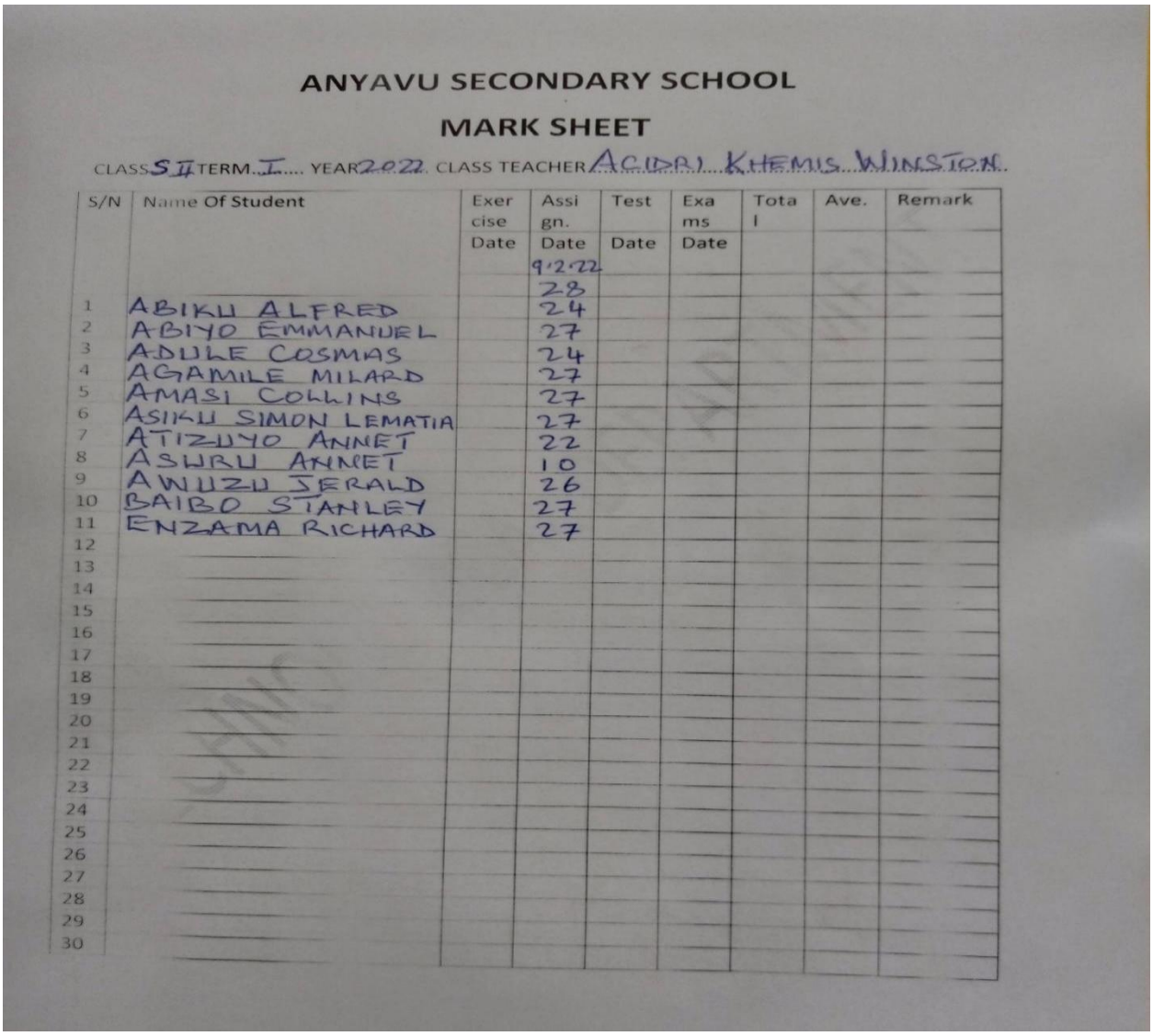
4.6 Individual differences

The hypothesis that learning outcomes will vary as a function of cognitive style has led to the idea that for optimum learning to occur, the nature of instruction should be adapted to the needs of the learner (Dragon, 2009). Ideally, students can be taught in ways that are sensitive to individual differences. Additionally, students with disabilities have significantly contributed to the diversity of the general classroom. This study was carried in Inclusive secondary school, Students with disabilities have opportunity to attend either or both special education and general education (Kanya, 2014). Although they have presented challenges, they have added a rich dynamic to the classroom.

To solve the issue of individual differences stakeholders resolved that teachers should encourage and form discussion groups in their classes. List of group members and their leaders produced, this improved learning, revision, and performance. Discussion is a type of activity, which involves breaking the class into small groups for effective talking on a topic, a problem or issue. It is thinking together process in which pupils talk freely to the teacher, to one another, a student-centered method since students participate actively. The role of the teacher is that of a moderator, there is flow of information from teacher to student, from student to student (Yusuf and Adamu, 2016). The Group discussion method was intensively debated in FW and methodology.

4.7 Prompt Feedback

Prompt feedback is one of the motivational strategies teachers regard as the information suitable to the students which makes them to draw comparison on their actual performance without delay. It is the process of informing students, parents and administrators regarding students' progress under certain period. Oche (2012), says that providing students with feedback on their test scores concerning their performance in periodic test may serve as instructional aid in the knowledge of results to facilitate learning. According to him, prompt feedback could facilitate the existence of interaction between the teachers and the students as well as the flow and exchange of information between them. Hull (1952) and Skinner (1957) as cited by Beard (2008) affirmed that knowledge of results act as reinforcement. As a solution to the problem of feedback, stakeholders affirmed exercises, home works, assignment, tests, examinations should be marked, scored, corrected and the books, papers, result should be released as soon as possible. To operationalize that, class Mark sheets were designed to be used by individual teacher. Prompt feedback to students motivated them hand in exercise, assignments, projects and other works early and this improved performance in the school.



ANYAVU SECONDARY SCHOOL

MARK SHEET

CLASS S II TERM I YEAR 2022 CLASS TEACHER ACIDRI KHEMIS WINSTON

S/N	Name Of Student	Exercise Date	Assign. Date	Test Date	Exams Date	Total	Ave.	Remark
			9.2.22					
			28					
1	ABIKU ALFRED		24					
2	ABIYO EMMANUEL		27					
3	ADULE COSMAS		24					
4	AGAMILE MILARD		27					
5	AMASI COLLINS		27					
6	ASIKU SIMON LEMATIA		27					
7	ATIZUYO ANNET		22					
8	ASURU ANNET		10					
9	AWUZU JERALD		26					
10	BAIBO STANLEY		27					
11	ENZAMA RICHARD		27					
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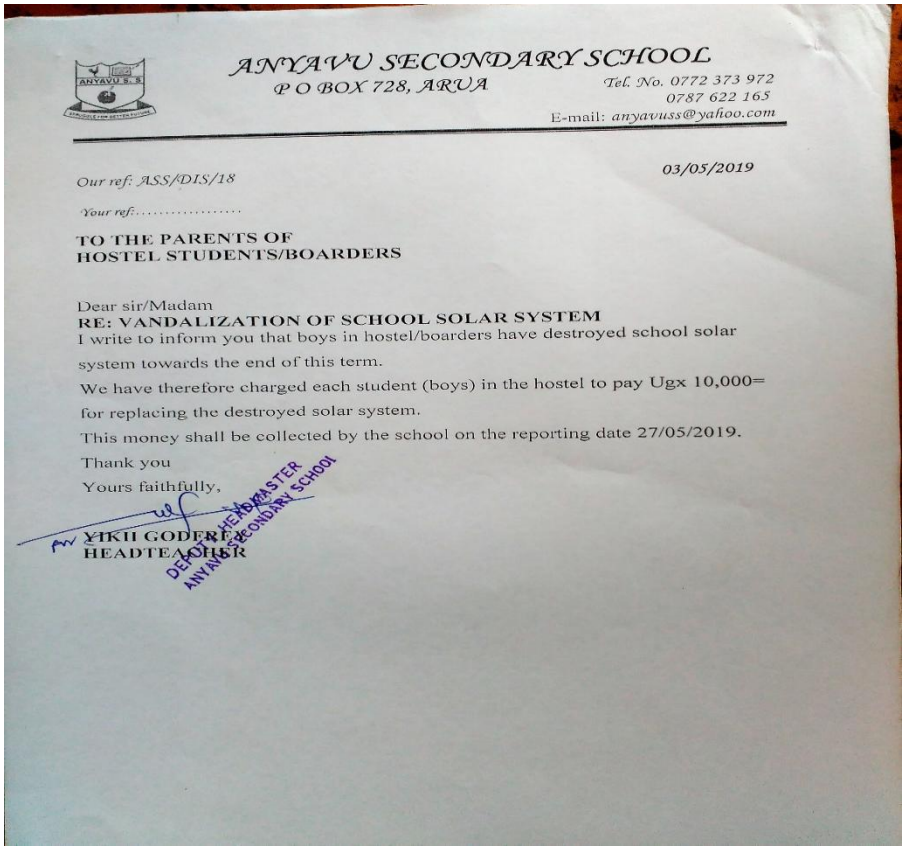
Figure 4.5: Mark Sheet. Source: (Developed by researcher for TD Department)

4.8 Indiscipline

Formal education aims at shaping desirable behaviors among students and fading the undesirable ones, this key role of education has not been fully attained as students' behavior in schools is a prevailing problem affecting secondary schools in many areas (Ndambuki and Munialo, 2016). Secondary schools have to deal with inappropriate behaviors among students, including stealing behavior. In the implementation strategy meeting stakeholders mentioned stealing of learning

materials amongst students as a great challenge affecting academic performance since it disorganizes the affected individuals psychologically and materially. As a solution, stakeholders proposed and implemented locking of student's cases, dormitories, small gates, snap checkups where unwanted items were confiscated, daily security records were received dormitory leader and school guards, refund and compensation were remedies to deter culprits. However sneaking through the fence remained a big challenge the school is struggling to fight.



ANYAVU SECONDARY SCHOOL
P O BOX 728, ARUA
Tel. No. 0772 373 972
0787 622 165
E-mail: anyavuss@yahoo.com

Our ref: ASS/DIS/18
03/05/2019
Your ref:.....

TO THE PARENTS OF
HOSTEL STUDENTS/BOARDERS

Dear sir/Madam
RE: VANDALIZATION OF SCHOOL SOLAR SYSTEM
I write to inform you that boys in hostel/boarders have destroyed school solar system towards the end of this term.
We have therefore charged each student (boys) in the hostel to pay Ugx 10,000= for replacing the destroyed solar system.
This money shall be collected by the school on the reporting date 27/05/2019.
Thank you
Yours faithfully,

YIKII GODERT
HEADTEACHER

DEPUTY HEADMASTER
ANYAVU SECONDARY SCHOOL

Figure 4.6: Charge for replacement

4.9 Rote Learning

The approaches to learning play a significant role in determining the outcomes of educational endeavors (Ahmed and Ahmad, 2017).Rote learning approach is a style of learning in which pupils seek only to retain and later to recall some information, result or process, without

necessarily making cognitive connections between the new learning and their existing network of understanding (Michael, 2015).Rote learning does not create a building block on which knowledge can be built and does not provide a skill or knowledge that can be connected with any other skill or knowledge.

Stakeholders learnt that the approach used to facilitate learning in secondary schools was rote learning. To improve TD skills practices in secondary schools, the solution was to adopt Active Teaching and Learning approaches whereby the teaching methods among others include; Problem-based learning which pillars problem solving and Projects learning which emphasis creativity and innovation allow learners to do critical thinking to translate what is learnt in to physical models and be caper able of reversing physical models to drawings.

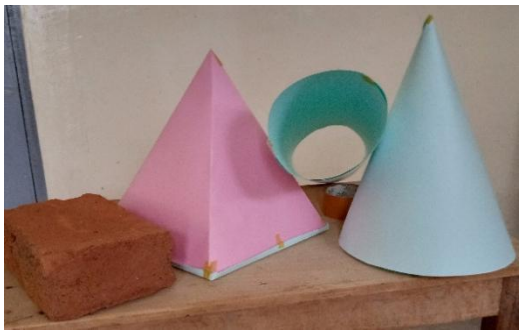


Figure 4.7: Physical models

Figure 4.8: A learner demonstrating concept of models on black board

CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, results of action research study were discussed and analyzed, teaching and learning process of the T.D skills practices in secondary school in Uganda in relation to the study objectives and generated themes, recommendation for future action and conclusions. The central phenomenon of the study was to explore the use of a designed template, its implementation and evaluate the impact of the template application strategies set by stakeholders in teaching of technical drawing to improve competence among students in secondary schools in Uganda.

5.2 Issues Affecting Technical Drawing Skills Practice for secondary school in Uganda

The issues that affected effective teaching and learning of T.D skills practice were traced and discovered from directed vocational studies (DVS), situation analysis (SA) and future workshop (FW) which appeared in subsequent write up. The discussion and analysis of the results were basically hooked on the stakeholders' findings, observation, researcher's experiences, documentary analysis about the T.D skills practices and acquisition reflecting on the situation in the school.

5.3 Designed a training template for technical drawing skills practice for secondary schools in Uganda

Following meetings with the stakeholders, numerous issues affecting T.D skills practice for secondary schools in Uganda were identified which included; poor time management ranked number one, indiscipline ranked number two, negative attitude towards TD ranked number three, poor learning environment ranked number four, and inadequate instruction materials ranked number five in the pairwise table. The ranking process indicated inadequate time for learning as most pressing and critical issue that needed immediate intervention. To improve technical

drawing skills practice and inadequate time for learning, stakeholders designed a template which was enforced in the school to improve the teaching and learning of the subject, which is in line with

(Bower, 2017), who defines design as a process of creative and critical thinking that allows information and ideas to be organized, decisions to be made, situations to be improved, and knowledge to be gained

5.3.1 Inadequate teaching and learning material

In the stakeholders' implementation meeting to forge way forward for the improvement of T.D skills practice for secondary schools in Uganda, stakeholders especially teachers pointed out that the inadequacy of teaching and learning material limits the right procedure of instruction, which is frustrating and demotivating. Students complained that drawing materials are not enough to supply the whole class, some equipment are shared, improvised and supplemented making it difficult to follow the teacher, understand the subject and yet school administrators considering it to be expensive compared to other practical subjects. The complain of funding technical subject is not only in Anyavu secondary school in Arua district in Uganda, but also in other countries as Ogbu, (2015) observed that, the inadequacy of funding in science and technology teaching is acute in Nigeria, more so at this time that the country is struggling to get out of the quagmire of economic recession.

5.3.2 Missing lessons of students and teachers

In stakeholders' discussion, it was mentioned that when learners go for meals (breakfast, lunch) others don't come back for lessons, they dodge lessons, hide in dormitories, under the trees, in library, yet missing of lessons and perpetual absenteeism results in low coverage of content, minimum time for practices and uncompleted syllabus and low coverage in the period hence,

performance in that cycle is automatically affected negatively. This finding is in line with Niemeyer, (2013) who stated that students who are chronically absent are at increased risk of poor academic performance, behavioral issues, and dropping out of high school. Teacher absenteeism disrupt the routines and relationships that support learning.

5.3.3 Poor communication skills

In the meeting, stakeholders discovered learners only used local languages at the school claiming in primary they were not instructed in English (thematic curriculum) which made them used to the local languages and it affects them not to interpret question correctly in English language. This is a big challenge to teachers making them to drill which is time consuming, and low content coverage at the end of the lesson. To change the culture, English teachers were urged to impart language skills to the students they started involving students in frequent class exercises, poems and dramatization teaching techniques as viewed by Asemanyi, (2015) where he said communication skills enables students to have knowledge or the ability to use the requisite skills to communicate properly. It is relevant and has an added importance of equipping students with proper language skills to assist them in their studies.

5.3.4 Poor relationship between students and teachers

Good endeavors of teachers in a school is of great importance in the learner's curiosity to his/her subject. In the stakeholders meeting it was pointed out that some teachers' explanations in the teaching is not clear, so fast, when requested by student to re-explain they cannot, some are not friendly in the class wear gloomy face which looks threatening as a result learners lose interest in the subject and instruction. According to Albalawi and Nadeem (2020), prospects of the teaching and learning interaction inside a classroom heavily depend on the successful transmitting or exchanging of ideas and information between the teachers and his/her students to ensure

competitiveness in the exchanging ideas and information between teachers and students, it is imperative to ensure a congenial classroom atmosphere.

5.3.5 Individual differences

A class is a combination of innumerable persons and with different attitude, cultures, perceptions absorption, beliefs, which is articulated to fast, average and slow learners, stakeholders discovered handling different categories in the class is a big challenge for teachers to bring all of them to board at ago, this needs more time for instruction, and learning materials which is overloading period on teachers and expensive to the school. This finding concurs with Moore, (2001); some students are slow while some are quick learners. Some students need extra teacher help, some learn on their own. Kubat, (2018) added, each individual learns in a unique way, some learn best by hearing, seeing, reading, and touching some materials.

5.3.6 Prompt feedback

Learners understanding of lesson is assessed through exercises, tests and assignment, in the meeting with the stakeholders, some teachers delay to mark, and return papers in time. This discourages students and take long to hand in given works causing limited time for practicing work which leads to poor performance. Feedback is considered as a vital approach to facilitate students' development as independent learners in order to monitor, evaluate, and regulate their own learning (Al-Bashir and Rahman, 2016).

5.3.7 Indiscipline

Indiscipline in Anyavu secondary school is a major social problem that affects the well-being and educational achievements of students. In stakeholders meeting, it emerged that students cut and dismantle fencing wires to sneak out of school premises to go to recreational centers, disco dance, for consumption of alcoholic beverages and drugs abuse increased cases of theft at

climax, unrest in and around school community, indiscipline acts in the school. This findings concur with the research of Hassan (2021) who found that the common indiscipline in schools in Uganda are sneaking out of school compound, theft, and drug abuse among others causing frustration to students who lost their items, teachers and administrators giving work of disciplinary meetings, apprehending the culprit, administering punishment which is time-consuming and leads to interrupted coverage of syllabus.

5.4 Template guidelines for technical drawing skills practice in secondary schools in Uganda

In this section, I assessed the implementation strategies which were laid by the stakeholders, executed plans, methods, designed ideas, models, specifications, and standards for improving T.D skills practice in secondary schools in Uganda. The strategies rime with Durlak, (2013) the definition which states, Implementation is the evidence-based plans or practices of known aspects' efforts intended to get operative adjustment approaches.

5.4.1 Availability of instructional materials

In the implementation strategy meeting, stakeholders resolved that all educational parties in the school that is, administrators, teachers and students should play their parts to avail necessary teaching and learning materials, after the stakeholders' resolution administrators availed some assorted text books, photo copied some which cannot be bought immediately, teachers committed themselves to have personal drawing instruments, repaired and produced drawing instruments for students. Students also accepted to come with simple drawing items like pencils, squares, pencils to improve on their T. D skills in the school, this is evidenced by the assorted text books and instruments seen in Figure 4.2. It helped teachers to plan lessons appropriately and learners have material for interaction and research which improved TD performance in the

school. Stakeholders' resolution is also corroborated with Susan (2014) stated that schools equipped with adequate and relevant learning resources are likely to have students performing well in examinations. It agreed with the conclusion of Toyosi, (2018) there is a significant influence of school equipment and instructional materials on students' academic performance in secondary schools.

5.4.2 Students and Teachers Lesson Attendance device

Missing lessons by students and teachers was found to be an issue of concern by the stakeholders as it is the cause of inadequate content coverage whereby the side effect is less time for T.D skill practices for students. To administer that, the lead researcher designed students daily roll call sheet for tracking students lesson attendance and teachers lesson attendance monitoring tool for monitoring teachers' lesson attendance which improved attendance, lesson and syllabus coverage hence performance improvement. This finding is in agreement with Katanga, (2016) who stated that countries such as the United Kingdom (UK) and United States (US), use attendance documents to control and monitor learner absenteeism. In Uganda a policy guideline in 2009 Ministry of Education and Sports (MoES), requiring head teachers to closely track teachers' attendance records was used (Okurut, 2012). Consequently, the lead researcher enforced the policy by designing devices illustrated in Table 4.2 page 48 and 4.3 on page 49.

5.4.3 Students presentation

In stakeholder meeting students' poor communication skills was found to be source of poor performance due to misinterpretation and understanding of questions. To improve communication skills of students, the lead researcher advised teacher to plan their lessons which involves learners' full participation in class presentation as shown in Figure 4.3.This trained the students to gain confidence to talk before public, improved spoken English and interpretation of

examination questions that changed TD results to be better. This is in agreement with Albloly, (2020) whose study gives an interaction between the presenters and the audience which provide both sets of participants with numerous opportunities to practice their English abilities with other students in an authentic manner.

5.4.4 Monitoring student and parent-family tool

Many students tend to avoid teachers in one way or the other in many ways and reasons including dodging his or her subject, the lead researcher and administrators introduced a method of befriending and pulling students closure to them and attend lesson regularly. This is enforced by the tool indicated in Table 4.4; it allowed students to be counselled and guided by the teacher in charge of the group any time individually or in a group. This reduced the misconduct and students come for consultations that improved performance in TD which rimes with Githaye, (2011) recommendation that schools should establish guidance and counseling programmes and senior teachers be made responsible for this.

5.4.5 Discussion group

A school comprises of many category of human charters and cultures, one cannot expect all individuals to behave in the someway and perform in class at the same rate. In this regard, the researcher emphasized the formation of class group discussions which was proved by the teachers to be very good initiative which reduces over stressing, monopolizing teaching and learning.

Learners felt it's a technique that allows and gives them chance, freedom to learn at their pace and from colleagues. The evidence is in Figure 4.4 page 52 which Yusuf and Ibrahim, (2016) expressed it is an activity which involves breaking the class into small groups for effective talking on a topic, a problem or issue. It is thinking together process in which pupils talk freely to

the teacher, to one another and a student-centered method since students participate actively, the role of the teacher is that of a moderator.

5.4.6 Record keeping

Continuous class assessment is considered to be a good strategy to check learners academic progress and level of individual understanding in a class, the lead researcher encouraged teacher to give frequent exercises, tests, assignments and mark the papers promptly and fill the scores in the designed tool in Figure 4.5 page 56 for proper record maintenance as defined by Ataho, (2012) a record is information created, received, maintained as evidence and information by an organization in accordance with legal obligations.

5.4.7 Security

The School administration is battling with the learners' indiscipline cases of various calibers ranging from theft, sneaking out, drugs abuse, alcoholism, assault, disobedience, vandalisms, and others on daily bases. This is the biggest challenge which has not been controlled completely though some preventive measure were forged to mitigate the acts. To reduce indiscipline of learners the lead researcher advised to lock dormitories, gates during class hours, conduct snap checks in dormitories to confiscate unwanted equipment, refund and replace damaged property, this was managed by the copy of letter seen in Figure 4.6 page 57 Nhlapo, (2006) suggestions to deter Insecurity is making sure entrances and exits are securely locked, Securing perimeter fencing and having heavily-padlocked gates where possible, establishing a regular patrol system of the whole school.

5.4.8 Rote learning

Technical drawing majorly deals with lines, calculations, figures, objects and production of drawings, rote learning is not favorable for the subject, therefore, teachers should use physical

models where necessary to explain concepts during instruction to concretize learning and assign learners to translate drawing, specifications, into physical models for consolidating their learning as seen in Figure 4.7 page 58. The physical act of making something is also described as very valuable by Voulgarelis and Morkel, (2014) who write "the craft of making some things functioned as a vehicle for thinking ideas in the concrete matter".

5.5 Evaluation of the implemented guidelines for technical drawing skills practice in secondary school in Uganda

Under this theme I evaluated the implemented strategies that were set by the stakeholders aimed to enrich T.D skills practice of students and to assess those which worked and those which didn't work. Evaluation in teaching is a process of collecting, analyzing and interpreting information about teaching and learning in order to make informed decisions that enhance student achievement and the success of educational programs (Jabbarifar, 2009).

5.5.1 Availability of instructional materials

After the implementation strategy meeting, administrators availed some instructional materials which were found to be a great boost for planning lessons for the teachers and learner centered teaching because material is given to a learner to research in advance and make them active in the class. Learners revealed that in addition to what they brought, availability of instructional materials have made them to do more practice in drawing, consult reference resources any time and they have seen improvement in their drawing skills.

5.5.2 Students and Teachers Lesson Attendance device

Stakeholders found missing lessons and absenteeism of students and teachers was serious drawback which contributed to poor technical drawing skills practice in secondary schools, to minimize that, device to track both students and teachers' attendance was designed, the study

found that it improved the problem greatly since it gives liberty to learners to supervise their masters and teachers to follow their learners.

5.5.3 Students class participation

Presentation and demonstration improved learners' participation in class making learning lively, interactive, it also built confidence in learners in class sessions, public places like outreach, religious gatherings and functions as result great change is realized in question interpretation.

5.5.4 Teacher-Parent Family

Formation of parents' family was initiated by the stakeholders so that students are closely monitored and constantly guided by the teachers this concreted the relationship between learners, teachers and administrators as all of the children have their parent fathers who guided and counsel learners any time either individually or in a group. This method was found to be very good technique not only for counselling but also for career guidance and capacity building.

5.5.5 Discussion Group

Teachers guided students to form discussion groups which was done by mixing first, middle and slow achievers (learners), this was found to be a way of bringing every learner to board, learners appreciated the teaching and learning technique, it allows them share their experiences among themselves. Teachers realized learners express themselves freely in their groups which improves performance in T.D.

5.5.6 Record of Scores

A printed mark sheet was used to fill marks of the students which served as an accurate source for record-keeping and updating teachers on their learners' marks. The tool also helped the administrators to track teachers who award marks without administering examinations and marking. It encourages prompt feedback to learners and administrators.

5.5.7 Safety and Security

Indiscipline and theft were serious challenges secondary schools were battling with, several preventive measures like locking gates, dormitories, abrupt checkups were laid to control the situation, but things did not work to satisfaction. Stakeholders said this issue needs collective effort from all the education stakeholders which include parents, teachers, students, opinion leaders, government leaders, and Elders.

5.5.8 Rote learning

To make the transition from rote learning, teachers started using physical models, objects, bricks for teaching and learning. Learners use papers, boxes, and local materials available within the vicinity to convert drawings to physical models and vise-vasa which helped them internalize and reflects reality of the situation to develop problem solving techniques and lifelong learning.

5.6 CONCLUSIONS

In this chapter, the conclusions were derived from the findings of the study on the experience of the stakeholders involved in the study had described. The conclusions were based on the purpose, directed vocational studies (DVS), situation analysis (SA), future workshop (FW), and results of the study.

The study concluded that traditional and cultural habits of early marriages, the mindset of depending on peasant farming, vending in markets make school-going age youths have poor attitude towards education. Periods allocated on the syllabus are not enough for teaching and learners to practice TD skills. Inadequate teaching and learning materials was a great challenge, TD being practical subject, it needs adequate resources for effective teaching, learning and practices.

In disciplined learners who are not obedient to authority attend class irregularly sneak, outside through the fence, stealing school and colleagues' property were serious issues school was struggling to mitigate.

Polluted learning environment from leisure activities, and other social lives from neighboring communities, trading centers, and markets disrupt learners' concentration at the class and during preparation times.

5.7 RECOMMENDATIONS

The recommendations made were on the basis of the results achieved; in spite of all the limitations the conclusions do suggest practical strategies that schools could employ to improve academic performance among learners. These are the kind of strategies I feel administrators need to reflect on in their academic meetings, suggestions and implementation discussions:

- Career guidance should be enforced in the school by administrators, stakeholders, and old boys /girls who have climbed the ladder successfully and achieved the benefit of education spearhead as role models to inspire students in learning.
- There should be enough time allocated for teaching and practicing T.D skills which had been suffocated by limited time provision in the school syllabus and timetable.
- Technical drawing being practical it needs adequate teaching and learning materials, Government, partnering agencies and schools should provide enough resources in schools offering practical subjects like T.D.
- Learners' indiscipline cases remained biggest challenge among the issues identified by the stake holders in the school, this call for parents', teachers and school administrators to join hands to fight the bad behavior.

- Sound pollution and other social activities in the neighboring village, trading center and markets was realized to have bad impact on learners' academic achievements, therefore neighboring community, should be enlightened to allow good learning environment for the students.

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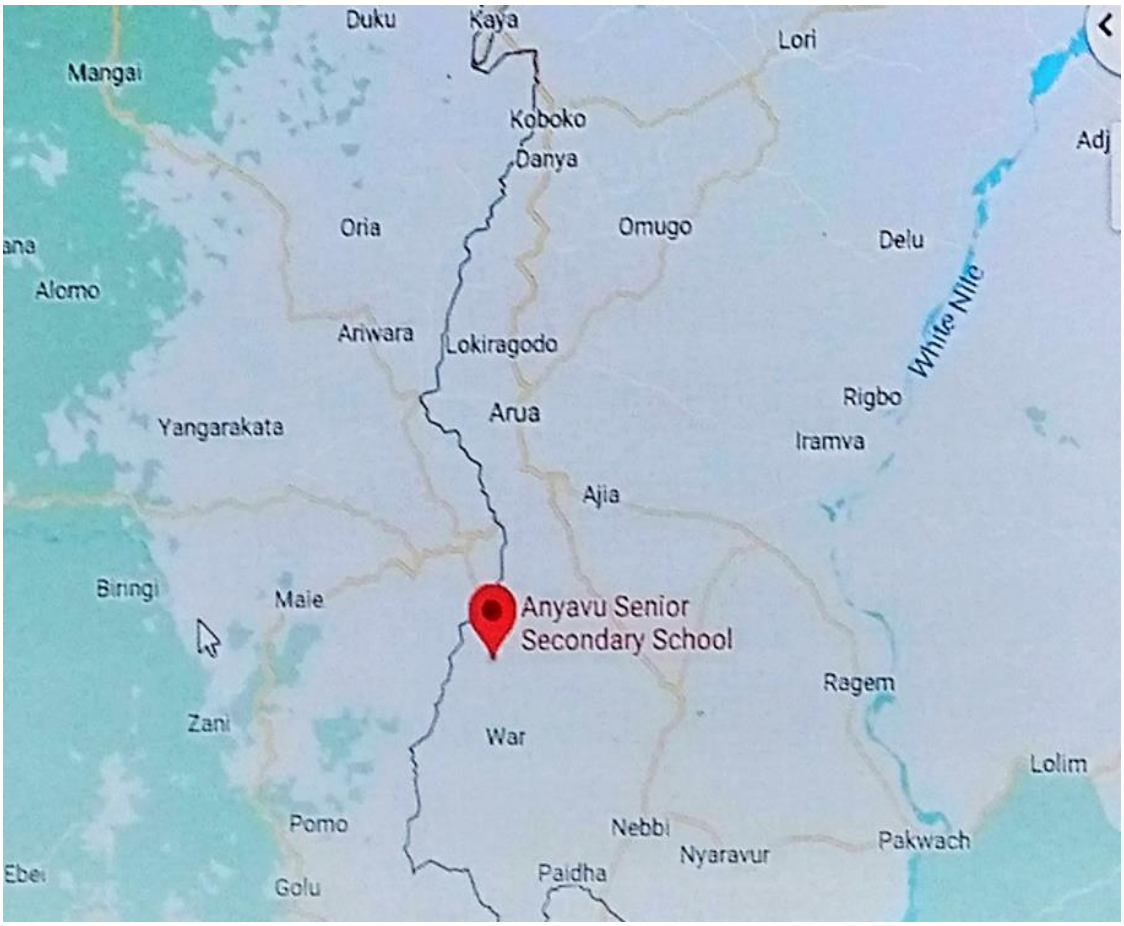
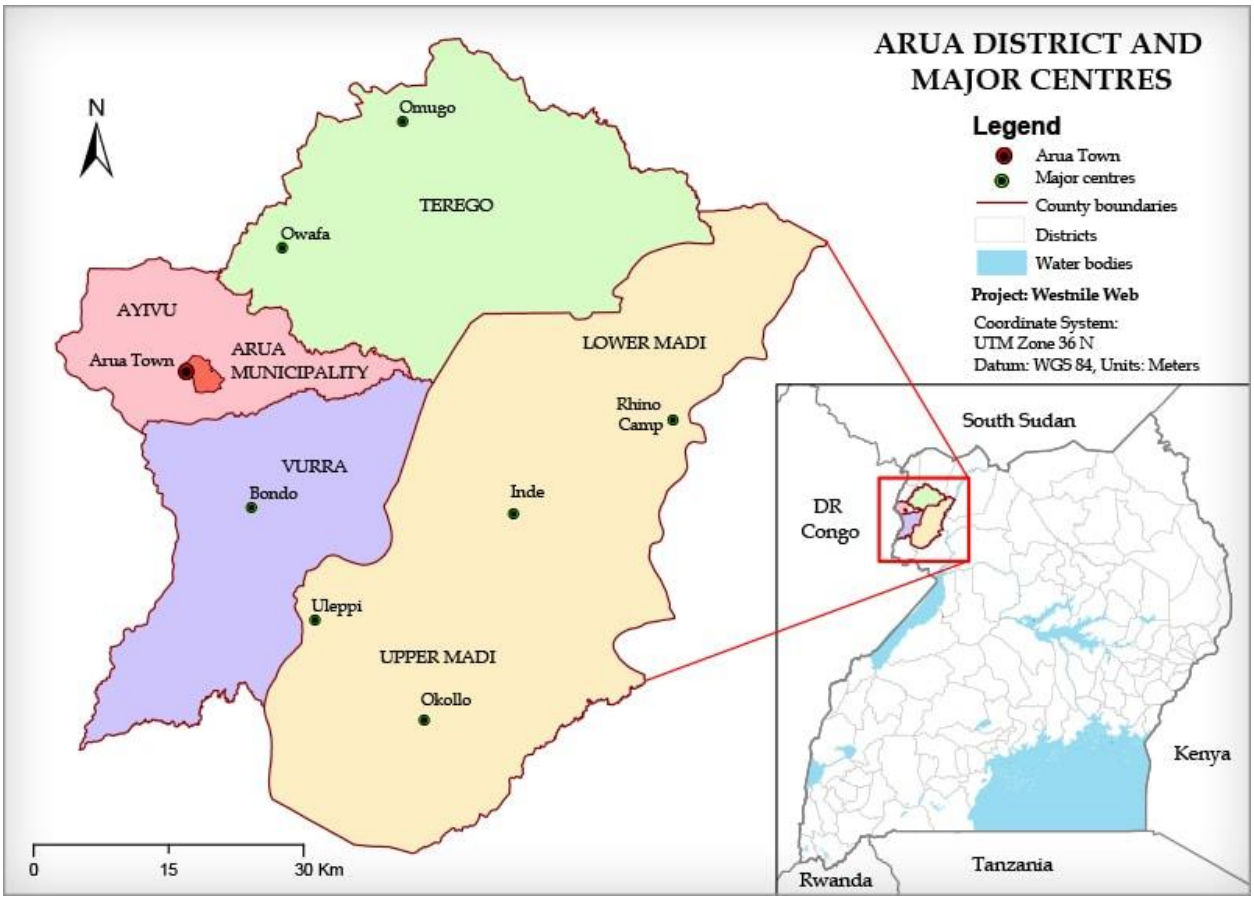
Appendix A

Location of Anyavu Secondary School where the study was conducted



Appendix B

Map of Uganda showing Arua District



Appendix C

Letter of Consent

KYAMBOGO UNIVERSITY

P.O. BOX 1 KYAMBOGO

20th September, 2020

Consent for Participation

Dear Participant.

I am a student of Kyambogo pursuing a master's Degree in vocational pedagogy. I am carrying out a study on Enhancing Technical Drawing Skills Practice of Students in Uganda. A Case of Anyavu Secondary School. The study is a requirement in vocational pedagogy program.
The findings of this study if necessary may be published for the benefits of the other secondary schools. Your responses will be kept confidential with anonymity of the names and row data will be kept under lock and key. Participation in this study is voluntary and you are free to terminate your participation at any time should you feel uncomfortable without penalty.

The risks of participation in this study are very minimum and of a social or reputational nature. In the event that you are willing to participate in the study, you will be required to offer consent by signing on this form.

The consent form has been explained to me, and I have understood the purpose of the study, risks involved and that participation is voluntary. I am willing to participate in this study.

Name……... Signature……

Appendix D

Introduction Letter

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

15th September, 2018

.....

.....

RE: INTRODUCTION OF ACIDRI KHEMIS.

This comes to introduce to you ACIDRI Khemis a student of Masters in Vocational Pedagogy (MVP) Programme at Kyambogo University. This student bears registration no. 17/U/14269/GMVP/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,

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

Appendix E

Implementation Meeting Minute

STAKEHOLDERS ACTION RESEARCH MEETING ON IMPLEMENTATION ACTIVITIES HELD IN ANYAVU SECONDARY SCHOOL NEW LABORATORY BLOCK ON 06 AUGUST, 2019

Agenda

1) Opening prayer
2) Communication from the chair/ lead researcher
3) Implementation strategies / plan intervention
4) Closure

S/N	Minute	Responsible Person
01	▪ The meeting was opened by short silent prayers conducted individually.	Stakeholders
02	▪ Well come members and thanked them for positive response amidst tight schedules. ▪ He introduced the meeting as Action Research implementation strategies / plan intervention. ▪ He said the aim of the meeting activity was to lay possible strategies and solutions that can make positive change in the institution to improve performance.	Chairperson / Researcher
03	▪ He said we shall use availed manila card to elaborate our suggested plans and possible solutions to the problems for agenda number three, this was intensively discussed as seen on the designed implication strategies template. ▪ A member requested the lead researcher to tell the stakeholder the title of the research under discussion again, some people might have forgotten**.** ▪ He said the title for the research is Enhancing Technical Drawing Skills Practice of Students in Uganda: A Case of Anyavu Secondary School.	Researcher Stakeholder Researcher
04	▪ In the closing remarks the researcher thanked stakeholders for free deliberation. ▪ That we shall have other meeting to see the success of this research and to evaluate suggested implementation strategies whether they worked or not and why. ▪ Stakeholder (Teacher) urged students to implement suggested plans since its strategy for improving performance.	Researcher Stakeholder

IMPLEMENTATION STRATEGY TEMPLATE

S/N	Issues/Problem	Possible solution to the problem	Responsible	Time Frame	Indicators/Monitoring Tool
01	Inadequate teaching and learning material	Need to acquire more teaching and learning materials	Administrators Teachers, Students	16th sep,2019 to 11th oct,2019	list of materials availed/not availed
02	Missing lessons by students and teachers	Attendance list for students, supervision sheet, for teachers	Class teachers, prefects ,Administrators	16th sep,2019 to 11th oct,2019	Students daily roll call sheet, Teachers lesson Attendance monitoring Tool
03	Poor communication skills	Demonstration, Presentation of content by students, Teacher	Students, Teachers Administrators	16th sep,2019 to 11th oct,2019	Participation in presentation
04	Poor relation between students and teachers	Counselling and guidance	Administrators, Students Peer, Teachers	Immediately 06August,2019	Monitoring Students and parent-family tool
05	Individual differences	Formation of discussion groups	Students, Teachers, Administrators	Immediately 06August,2019	List of Discussion groups
06	Prompt feed back	Marking, correction	Teachers, Students, Administrators	Immediately 06August,2019	Record of marks, Scores
07	Theft and Indiscipline	Counselling and disciplinary action	Teachers, Administrators, Students	Immediately 06August,2019	Records of daily security, Remind to lock cases, dorms, gates
08	Rote Learning	Active Teaching and learning	Teachers And Students	Immediately 09 Nov,2021	Physical models

Chairman…… Secretary……...

Attendance List for Stakeholders Action Research Meeting on Implementation Activities on 6.8.2019

S/N	Name	Designation	Sign
01	ARIKUA GILBERT	Tr	[signature]
02	AFEDRA SAMUEL	Tr HOD AGRIC	[signature]
03	Ayikoonzi Gregory	Tr	[signature]
04	EHDRIYO JOHN	St S.3	[signature]
05	AJIO MICHAEL	St S.3	[signature]
06	EMVUKU MORISH	St S.3	[signature]
07	ECONI KATHRIR	St S.3	[signature]
08	Acidri Junior Lawerence	St. S.3	[signature]
09	EDEMA D. GODFREY	St. S.3	[signature]
10	OBANGI ALEX	St. S.3	[signature]
11	GUZU LUKE H.	(Tr) HOD IPS	[signature]
12	ACIDRI KHEMIS WINSTON	Tr HOD T.D (Researcher)	[signature]

Appendix F

Situation analysis/ Future workshop minutes

STAKEHOLDERS ACTION RESEARCH MEETING HELD IN ANYAVU SECONDARY SCHOOL NEW LABORATORY BLOCK ON 10th OCTOBER, 2018

Agenda

1) Prayers
2) Introduction of stakeholders
3) Setting of ground rules
4) Opening remarks and communication from the lead researcher
5) Situation analysis
6) Future workshop
7) Closure

Min1/ 2018 Prayers

The meeting was opened by a moment of silence for prayers conducted individually.

Min2/ 2018 Introduction of stakeholders

The stakeholders introduced themselves and this was done by both Students and Teachers/Administrator.

Min3/ 2018 Setting of ground rules

The governing rules was set on ground regarding the program included the following:

- Freedom of expression
- There should be no opposition to members' submissions
- Delivery will be one person at a time
- Time management
- Precise to point
- Maintain silence in the session

Min4/ 2018Opening remarks and communication from the Lead Researcher

The lead researcher in the meeting who acted as the facilitator welcome stakeholders for coming amidst tight school programs and work pressures especially on senior four candidates and teachers.

He said action research is collaborative, participatory, democratic and all members that comprised of learners, teachers and administrator are at the same level in the research processes making it different from traditional research method.

That in his experience and documentary analysis the school had poor performance in ordinary national examinations in general and Technical drawing as a subject in particular this needs intervention.

Min5/ 2018 Situation analysis

The researcher said the issue of poor performance in Anyavu secondary school cuts across all other subjects. Therefore, there's need to investigate and identify some of the causes.
The problems stakeholders identified included:

Government police of automatic promotion in class, thematic syllabus, child freedom made student not to concentrate on studies, Introduction of U.P.E &U.S. E increased Teacher, Student Ratio.

Mistreatment of teachers by supervisors and administrators, no proper supervision by inspectors, corruption in supervision, Supervision for fault finding, Poor management style, and many subjects offered in secondary schools overload students. Inadequate number of teachers makes the few on ground to be overworked. Inadequate teaching and learning materials disrupts proper lesson planning for teachers.

Parents do not guide their children, not providing basic scholastic materials (Books. pens set box), pay of school dues, and culture of early marriage

Learners' poor attitude towards education, Waste time in pornographic materials, in discipline by learners, language barriers eg English, Poor back grounds from primary schools, Level of admission grades eg 2nd or 3rd, majority 28 Aggregates

Teachers, negative attitude toward teaching, in adequate number of teachers, Poor accommodation facilities for teachers, under payments, frequent transfer of teachers communities undermine teaching profession, interest of community on education is low eg not bringing up a school, Social interference eg disco dance, (sound pollution), poor relationship between teachers' students and parents, poor reading and discussion culture of students, poor time management, poor communication between student and administrators, poor accommodation facilities for students and teachers, theft cases among students.

Min6/ 2018 Future workshop

In future workshop, the identified problems in situation analysis were grouped in short-term (problems that can be solved quickly within six months), medium- term (problems that can be solved beyond six month), long- term (problems that can be solved in some years), problems with some similarities, relationships were clustered and later subjected to pair wise ranking where Adequate time was ranked number one.

Min7/ 2018 Closure

In the closing remarks, the lead researcher thanked stakeholders for free deliberation, that he was so grateful young Teachers were jotting some items, procedures of Future workshop for personal use, encouraged them to continue attending action research meetings and they can consult him for more clarifications.

Chairman…… Secretary……

10.10.2018

ATTENDANCE LIST FOR SITUATION ANALYSIS/FUTURE WORKSHOP

S/N	Name	position	Sign
01	WANJALA FELIX	D/HTR ACADEMICS HTS/GEO	
02	OLEMA IKARA JAMES	Teacher	
03	AFEDRA SAMUEL	Teacher	
04	YUMARU HESTER		
05	AFAYO GILBERT	Student S.4	
06	ADRIKO KELVIN	Student S.4	
07	EWUONZI DIMA OSCAR	Student S.4	
08	AYIKOBUA ORPHINE	Student S.4	
09	NYAKUTA SUNDAY	Student S.4	
10	EYOTIA DENIS	Student S3	
11	ADERO JULIUS	TEACHER	
12	CHANDIA GRACE SKI	TEACHER	
13	ACIARI KHEMIS WINSTON	Researcher	